

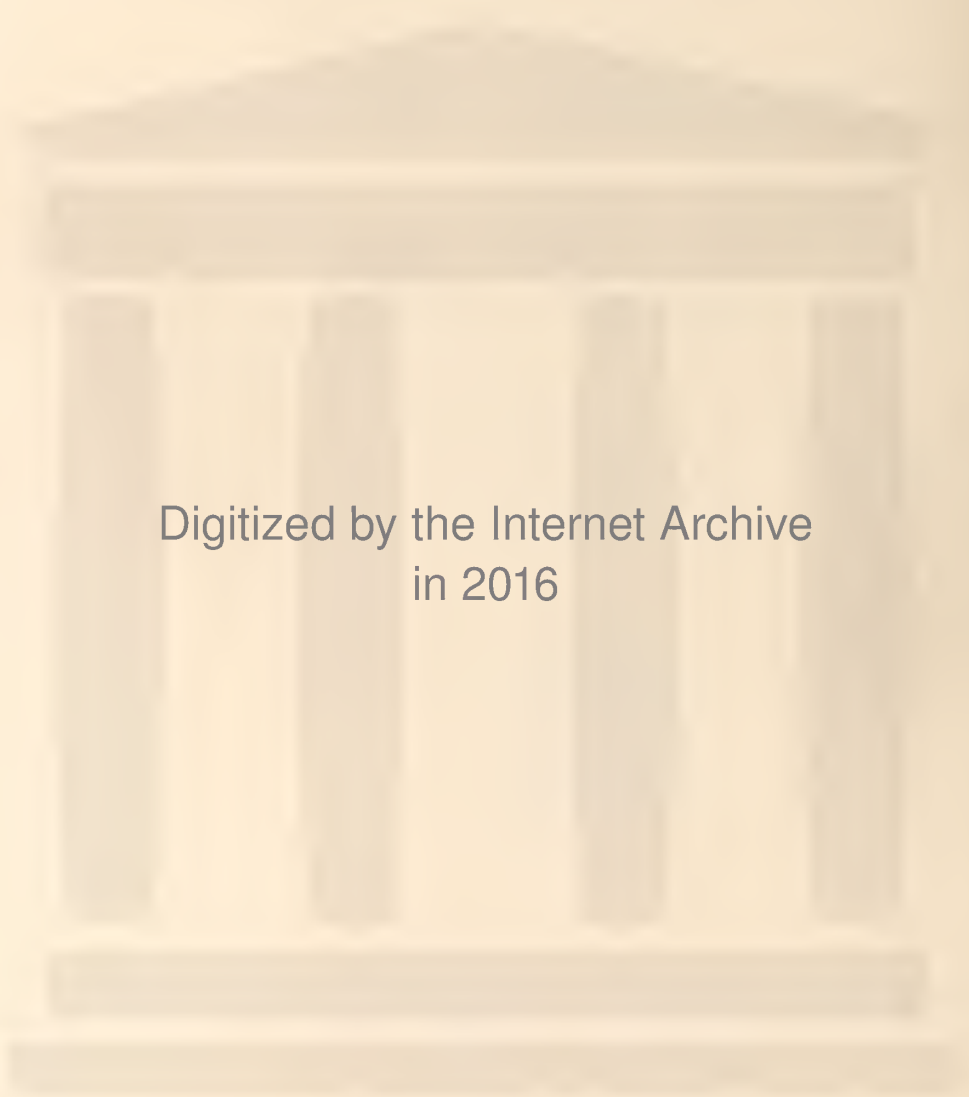
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THE JOURNAL

OF THE
OKLAHOMA STATE MEDICAL ASSOCIATION

VOLUME XXVII

McALESTER, OKLAHOMA, JANUARY, 1934.

NUMBER 1

RHEUMATIC HEART DISEASE

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Rheumatic heart disease is a disease of childhood. It rarely develops before five years and rarely after twenty years of age. The average age of its first appearance is about ten years.

The severity of its manifestations vary as to the intensity of the infection and the resistance of the patient. A pan-carditis can cause death or condemn its victim to a short life of chronic invalidism. On the other hand, many persons with a chronic rheumatic heart lesion have no symptoms and lead an active life without difficulty. It must not be forgotten, however, that these patients find themselves markedly handicapped if compelled to pass a physical examination previous to obtaining employment. The economic phase of this disease now becomes apparent.

The cause of rheumatic heart disease is rheumatic fever, which is now classified as one of the general circulatory system. It is now accepted that the heart is involved in more than 90% of all such cases. Such a percentage may not be demonstrable by the usual methods of examination, in fact, in rheumatic fever the heart may be involved and no murmurs demonstrable but electrocardiograms will prove the accuracy of these statements. At this time, reference is made to an article by McMillan and Nichols which can be found in the New Orleans Medical and Science Journal, November, 1931; to one dealing with the electrocardiograph findings published in the September 1, 1932 issue of Presse Medicale, and also, one by Levy and Turner in the Arch. Int. Med., February, 1929.

It is very easy to overlook a low grade rheumatic infection of the heart, with its remissions and exacerbations. It is to be remembered, however, that with each exacerbation, the heart is generally more

damaged than would be expected from the clinical manifestations of the exacerbation. The final outcome of the exacerbations is heart failure.

The symptoms of rheumatic heart disease depend upon the activity of the infection, the obstruction to the circulation resulting from the specific lesions or the failure of the myocardium to meet the demand of circulation.

Strange as it may seem, pain is not a striking feature, even in severe pan-carditis unless the pan-carditis involves the pleura. While murmurs are important and helpful we cannot rely entirely upon their presence or absence. Disturbed rhythm may be an early or even the first manifestation of a carditis. The electrocardiograph is one of the most important aids at our disposal, especially in recognizing obscure rheumatic infections.

Often the clinical picture is that of : chronic low grade sepsis, suggesting tuberculosis, undulant fever, or chronic malaria. A complete investigation of the heart will clear the picture. Failure to gain weight, fatiguability, loss of appetite, digestive disturbance, a fever of low type, are the only reasons the parents give for seeking medical advice. It is well to recall, that a low grade rheumatic endocarditis may be present and last for weeks, months, and even years with only these symptoms just mentioned.

The blood picture is not striking. There may be a rapid anemia and leucocytosis during the acute phase of this disease and a W.B.C. count of 9000 or less, which persists far into the afebrile and apparent inactive phase.

Fever is an important symptom and a prolonged charting is often of great value. It ranges from 99 to 101 degrees F and when present, an active process is indicated.

Of still more importance, is the pulse rate. If persistently fast, even in the absence of temperature, it indicates the pro-

cess is still active and the case should be managed accordingly.

A history of joint, muscle, and fascia pains, sore throat, can be obtained in about seventy percent of the cases. An atypical lobar pneumonia, prolonged abdominal pain, skin lesions like erythema multiforme, acute nephritis, should be looked upon with suspicion in taking our histories.

The earlier in life the cardiac lesions develop, the more serious it is and the shorter is the patient's life. It is usual for the child to survive the first rheumatic infection. As a rule, these patients withstand two or three attacks or exacerbations of rheumatism and reach the age of 20 to 25 years with a variable degree of heart damage provided life is not cut short by some intercurrent infection.

No treatment for rheumatic heart is needed unless flutter, fibrillation, and congestive heart failure ensues. If infection is present, the treatment is directed to the cause of rheumatic fever.

At this time, references on rheumatic fever are presented for your consideration. Swift, J.A.M.A., June 22, 1929; Thayer, Edinburgh M. J., April, 1931; Burness, Arch. Int. Med., May 1932.

In addition to nursing care, rest in bed, the salicylates are most used. Broken doses every two hours until relief of symptoms and fever or toxic symptoms occur. Some clinicians are now using a grain per pound per day on alternate days rather than the continued daily medication of smaller doses. As soon as saturation is accomplished, maintenance doses are given for about thirty days. Instead of sodium salicylate, the writer has used in adults, sal ethyl carbonate with gratifying results and with no gastric symptoms. Opportunity for observing its use in children has not presented itself, as yet.

It is important to realize that long continued use of the salicylates may mask the symptoms of low grade infection, such as pain, fever, and leucocytosis. This is an observation made by White and many others.

There is some question as to the value of salicylate medication as a preventative of a cardiac lesion. Master and Romanoff in an article which appeared in the A.M. A.J., June 4, 1932, consider the salicylates only as most efficient analgesics and anti-

pyretics. They found myocardial involvement in 100 per cent of their cases.

The opinion of Paul White that they are of demonstrable value is accepted by most clinicians. It has been recently shown that the simultaneous administration of magnesium sulphate or chloride in from 30-60 grain doses for an adult (proportional reduction for children), distinctly augments the action of the salicylates. Swift advises the substitution of amidopyrin for the salicylates. This substitution has received a marked endorsement by W. D. Stroud.

Serum therapy and roentgen irradiations of the heart have not met the approval of the profession at large.

The convalescent care of patients suffering from low grade rheumatic infection of the heart, has received much attention abroad, especially in England, where the condition is so prevalent. An excellent article on the "Organized Care of Patients with Acute Rheumatic Endocarditis," by Dr. M. J. Shapiro, appeared in an issue of the Minnesota M. J., May, 1931.

It is generally agreed that during the active stage, the patient should be kept in bed. Later, after withdrawal of the salicylates, the rectal temperature does not exceed 100 F., the white count below 9000, the pulse rate below 100, the patient gaining in weight and color and no signs or symptoms of infection found, we must consider the resumption of normal activities. At this time, it becomes a matter of judgment but it is well to bear in mind severe infection, prolonged convalescence. No hard or fast rule can be applied.

The location and removal of all foci of infection is important. One focus often overlooked is the ethmoid sinus. Remedial agents to build up body resistance are indicated. If possible a removal to a warm climate during the winter is advantageous,

The prevention of rheumatic heart disease can be accomplished only by the prevention of rheumatic fever. Regarding this disease, the following observations are presented for your consideration. (1.) It is more frequent in the colder, wetter parts of the temperate zones. (2.) A rheumatic familial history can be obtained in about one-third of the cases. (3.) It is more common in the crowded cities than in the country. (4.) Poor hygiene and poor environment favor its development.

(5.) It is a disease of childhood. (6.) It is mildly contagious.

Using these observations, Dr. Coombs approached this problem in Bristol, England, with sufficient success to attract the attention of the Minister of Public Health of Great Britain.

In this state, we do not have to contend with a cold, damp climate; we have no cities with overcrowded sunless tenements, therefore can concentrate our efforts upon the children. We should educate the public; we should use all the means at our command, toward the prevention rather than the treatment of rheumatic heart disease.

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GONORRHEAL ENDOCARDITIS— CASE REPORT WITH AUTOPSY*

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For a great many years bacterial endocarditis has captured the interest and fascination of clinicians, doubtless for the reason that there is no disease with a more varied symptomatology, all of the symptoms having a perfectly sound and rational pathological explanation.

The following case of gonococcus endocarditis is reported because of the relative rarity of the disease and the comparative certainty of the diagnosis.

History: The patient, a 25 year old white, married, oilfield worker, entered the hospital February 8th, 1932, complaining of progressive weakness, shortness of breath, swelling of the legs and fever.

Previous to the onset of the present illness the patient's health had been good, even though his occupation entailed strenuous exertion. He had frequent attacks of tonsillitis until three years ago, at which time he had a tonsillectomy. Seven years ago he contracted gonorrheal urethritis and since that time he had had an intermittent purulent discharge. No history of syphilis, rheumatic fever or of any pain in the joints could be obtained. Several months before admission to the hospital he had had a physical examination for life insurance and no abnormalities were found.

The patient's father and mother were living and in good health. His wife was living and well and there was one child, representing the only pregnancy, living and well.

The onset of the present illness was four weeks before admission to the hospital. It began suddenly with a chill, followed by high fever. The next day the patient noticed that his testicles were swollen. For the next two weeks he had a chill every afternoon,

followed by fever and drenching sweats. The chills gradually became less frequent but the afternoon rises of temperature persisted. He had no edema until three days before admission to the hospital, at which time he noticed slight swelling of his hands, feet and face. He stated that throughout the whole month of his illness he had gradually been getting weaker, paler and more short of breath.

Examination: The patient was a fairly well nourished white man of 25 years of age. The temperature was 99.8 and the pulse 90. He was quite pale, extremely ill but having very little dyspnea. The skin was warm and moist and there was no petechiae. The pupils were equal and reacted to light. Examination of the eye grounds revealed normal discs and vessels. There were no areas of exudate or hemorrhages. The conjunctivae and oral mucous membranes were pale and showed no petechiae. There was marked pyorrhea alveolaris. The tonsillar fossae were empty. There was no general glandular enlargement. The neck veins were not distended to any significant degree but the pulsation of the carotid vessels was quite forceful.

The left side of the chest was fuller than the right and both sides moved well. Percussion revealed a normal note and the breath sounds were clear throughout. There were a few coarse rales in the left base, and on one occasion a friction rub was heard over the right lower chest in the axillary line. The heart was definitely enlarged, the left border extending 12 cm., to the left of the midline and the right border 4 cm. Over the entire precordium there was a loud blowing systolic murmur. In the second right interspace there was a blowing diastolic murmur which could be heard down the left border of the sternum as far as the fourth interspace, at which point it assumed a rumbling character. There was no increase in the intensity of the pulmonic second sound. The blood vessels were soft and compressible. The radial pulses were of equal volume and of the collapsing type. The blood pressure was 132-40.

The abdomen was full but there was no evidence of free fluid. The liver extended 5 cm., below the costal margin and was tender to pressure. The spleen could not be felt. There was a small amount of edema of the face, hands and legs. There was no evidence of epididymitis and there was no urethral discharge.

The white blood count was 19,400, of which 84% were polymorphonuclear leukocytes. The red blood cells numbered 2,900,000 and the hemoglobin was 53%. Except for an occasional hyaline cast the urine was normal. The non protein nitrogen was 40 mgm., per 100 c.c. of blood. Blood culture was sterile.

Course in Hospital: Throughout the patient's subsequent course in the hospital the temperature showed daily excursions from approximately 99 degrees to 103 degrees. He was irrational much of the time. He was digitalized by administering 1.2 gms. of the powdered leaf over the first two days and kept on a maintenance dose of .2 gm. daily. He showed no apparent benefit from digitalis, though he received the drug to the point of nausea. He was given one blood transfusion which halted for only a short time his progressive anemia. About two weeks after admission, the murmur over the apex became much more harsh and rumbling. Frequent inspection failed to reveal the appearance of petechiae at any time. Subsequent blood cultures were sterile. On March 1, 1932, twenty-three days after admission the patient suddenly died.

Autopsy: On opening the thorax the heart and

*From the Medical Service—Oklahoma City Clinic and Wesley Hospital.

lungs were found to occupy their normal positions and there was no free fluid in the pleural cavities. There were no mediastinal adhesions. The pericardial sac contained more than the normal amount of fluid. The endothelial lining was smooth and glistening. The heart was quite enlarged, particularly the right auricle and the left ventricle. On opening the heart the tricuspid, mitral and pulmonary valves were all normal. The aortic valve was almost entirely relaxed by a mass of fresh, friable vegetations which extended a short way on the mural endocardium. At one place there was a perforation about 3 mm. in diameter through the vegetation close to the aortic ring.

Cultures of the heart's blood and culture of the valvular vegetations at the autopsy table proved to be sterile. However, a direct smear from the vegetation showed numerous gram negative, biscuit shaped diplococci.

In 1876 Marty¹ reported the first case of endocarditis due to gonorrhea independent of rheumatism, in an individual who had had clinical gonorrheal urethritis for six weeks. Following Neisser's demonstration of the gonococcus, Martin² (1882), Weichselbaum³ (1887), and others demonstrated the presence of gonococci in diseased valves. However, absolute proof of the exact nature of the infection was lacking until 1897 when as Vaquez⁴ remarks: "Lenharts⁵, who with an unscrupulousness that is truly astounding, innoculated a healthy human urethra with bacteria obtained from a culture of endocarditic vegetations and reproduced a typical discharge."

Although gonococcal endocarditis is a relatively rare disease several series and occasional isolated cases have been reported in the literature at rather constant intervals since the discovery of the gonococcus. Kulbs⁶ in 1907 reported 28 cases. Lion and Levy-Bruhl⁷ in 1922 reported 58 cases. Thayer⁸ reported 20 instances of the disease in 1922. Thayer's 20 cases occurred in a series of 176 bacteriologically proven cases of acute and subacute endocarditis. Thus in his series the gonococcus was responsible for 11.3% of all cases of bacterial endocarditis.

Anatomic Lesions: There is a general impression that the gonococcus has an especial predilection for the tricuspid valve. However, in Kulbs' 28 cases the left heart was affected twenty-six times, twenty times the lesion being aortic and in one case all the valves were involved. In Thayer's 20 cases the tricuspid valve was affected four times but in only one instance was it the only valve involved. In the 58 cases collected by Lion and Levy-Bruhl, the valve lesions were left sided in 48 and the aortic valve was involved in

35 of these. Thus the aortic valve is the most commonly affected but as in all acute ulcerative endocarditis the right side of the heart is affected more frequently than in subacute bacterial endocarditis most assuredly for the reason that the predisposing cause in about 80% of cases of subacute bacterial endocarditis is old rheumatic valvular disease, a condition which is almost universally left sided.

The anatomical lesions cannot be distinguished with any degree of certainty from those of other types of bacterial endocarditis. The vegetations are nearly always quite large, of a greyish color and very friable. Often there is extensive destruction of the valve and even perforation. The vegetations may extend on to the mural endocardium, into the sinuses of valsalva, and even destroy the chordae tendinae.

Diagnosis: In the last analysis the diagnosis depends upon bacteriologic evidence either from blood culture during life or culture and smears of the vegetation after death. As is well known the gonococcus is very difficult to culture, but it is possible with the proper type of medium. But even without bacteriological evidence the disease may be strongly suspected. The symptoms, like those of any acute bacterial endocarditis are simply those of a severe septicemia, in a patient who has or recently has had gonorrheal urethritis. The fever is of the septic type, perhaps normal or only slightly elevated in the mornings and 103 to 104 degrees in the evening with chills, sweats and delirium. A progressive anemia always occurs. The white blood count is usually between 15,000 and 40,000. Embolic phenomena are common, occurring in approximately two-thirds of the cases. They manifest themselves either as cutaneous and mucous membrane petechiae, or pulmonary infarcts depending on whether the left or the right side of the heart is the site of the vegetations. Emboli to the kidneys and to the brain occur occasionally. The heart is usually enlarged and the rate is quite rapid. The type and location of the murmurs depend upon the valve involved and the extent of this involvement. A murmur that can be heard to change from day to day is manifestly of the utmost significance,

Prognosis: Gonorrheal endocarditis is a malignant process nearly always pursuing a rapid and fatal course. However, the disease is not fatal in every case.

Silvestrini⁹, Withington¹⁰, Marfan and Debre¹¹, Dieulafoy¹², and Perry¹³ have reported cases in which recovery ensued. All of these patients had or recently had had gonorrheal urethritis and exhibited the typical findings of an acute ulcerative endocarditis. In each case gonococci were isolated from the blood.

Treatment: All types of treatment have failed. It is difficult to imagine benefit arising from the introduction of the various dyes in the blood stream in a disease in the course of which doubtless the blood spontaneously becomes sterile many times only to become reinfected from crumbling valvular vegetations teeming with organisms. And certainly no dye can penetrate the vegetations themselves. Digitalis has little, if any beneficial effect. However, the anemia can be combatted and this is best done with transfusions. Proper sedation and attention to general nutrition constitute the greater part of the treatment.

Summary: A case of acute ulcerative endocarditis is presented, the etiology of which was suspected during life and proved at autopsy.

The salient features of gonococcus endocarditis are briefly discussed.

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NEPHRITIS—AS SEEN IN THE LABORATORY*

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The history of nephritis dates back probably to Richard Bright, whose name is so often used when speaking of the disease. He gave his first papers at Guy's Hospital in London in 1827. At that time Pasteur, who did so much to bring about present day knowledge of bacteriology and laboratory findings, was but five years of age. In Bright's papers he pointed out the difference between edema and albuminuria and listed what we now call nephritis under two heads, the wet or acute and dry or chronic types.

The word "nephritis" is not a very satisfactory term from the laboratory standpoint, though on a whole preferable to any so far suggested. In strict sense it should mean inflammation while degeneration plays the more important part in the process under discussion. However, inflammation is the reaction to injury and includes degenerative changes as well as cellular infiltration. Yet, in the term "nephritis" we do not include such typical inflammatory lesion as renal suppuration. Fortunately the disease is quite sharply limited in a diagnostic sense and with the history, clinical picture and laboratory findings we can say with a good deal of certainty that a patient has or has not nephritis. This does not mean that there are not diagnostic pitfalls, but most of these disappear under careful and sufficiently prolonged observation. Rather than describing the various types of nephritis with condition and laboratory data for each, and as our time is limited, a rather generalized plan will be followed giving the laboratory point of view on different tests as this will save considerable repetition. Since nephritis disturbs renal function to a greater or less extent, it is desirable to begin with urine.

URINE

In all forms of nephritis the urine should contain albumin and is the most delicate indicator of pathologic changes in the kidney, although it tells little of its nature, extent, and seriousness. The amount of albumin eliminated in neph-

*Presented before Southeastern Oklahoma Medical Association, June 27, 1933.

ritis varies from minute trace to twenty grams or even more in twenty-four hours, and except in acute processes bears little relation to the severity of the disease. In acute and chronic parenchymatous nephritis, the quantity is usually very large, while in chronic interstitial nephritis it is small. On the other hand, albumin may be present even in considerable amounts in many conditions other than nephritis, a fact not well enough appreciated by the average practitioner.

An important feature of nephritis is a failure of the kidney to excrete normal solids which results in an accumulation of these substances in the body. Chief interest attaches to the nitrogenous waste products typefied by urea, and to the sodium chloride. Retention of urea is found in most cases of nephritis. In acute nephritis the amount of urea in urine is decreased. In the early stages of chronic cases it is usually normal while in late stages it is decreased. Hence, estimation of urea in urine is of little help in the diagnosis of nephritis. In the case of urea, retention is best measured by the exact methods of blood chemistry, and will be discussed at another place. Sodium chloride retention is generally associated with edema and is most typically seen in chronic diffuse nephritis. During a period of elimination of edema the sodium chloride is strikingly increased. The total volume of the urine likewise demands attention when nephritis is suspected, it being diminished in well defined cases in some forms and much decreased in others.

The specific gravity in acute nephritis is between 1.020 and 1.030; in chronic diffuse (parenchymatous) it is usually 1.010 and 1.020, while in chronic interstitial nephritis it is 1.005 to 1.012.

Perhaps one of the most useful of all laboratory methods which aid in recognizing the disease and in following the progress of the individual cases when diagnosed are the various functional tests. They represent the advance in the study of nephritis. They should, however, be used with full appreciation that some of the function may be disturbed while others remain unaltered, and the efficiency of the kidney may be markedly impaired by various extra-renal conditions. Upon the other hand, owing to the reserve power of the kidney, their function is sometimes not much disturbed by actual organic disease until considerable damage has been

done. Probably the best means of estimating renal function is the P.S.P. test. However, there is no necessary parallelism between P.S.P. excretion and blood nitrogen figures. Then we have the Mosenthal test meal with the variation in specific gravity taken every two hours. Here we should have at least ten points variation during the twenty-four hour period. Too, we have the water balance or water function test for the ability of the kidney to eliminate water, which is usually impaired in all types of acute or chronic nephritis. This impairment may appear to be most pronounced in those cases associated with edema. However, it is now recognized that failure of elimination of water may be had before there is any evidence of renal involvement. The edema of acute and chronic nephritis and nephrosis is largely due to a failure of elimination of chlorides and is probably due to an increased affinity of the tissue colloids for water, to sodium chloride retention in the tissue, to increased capillary permeability, or to a decrease in the colloid osmotic pressure of the blood plasma. All extra-renal factors must be taken into consideration when studying renal function on the basis of quantitative relationship between water supply and urine volume.

In the study of urine in nephritis, the microscope may reveal according to the variety of the disease, red blood corpuscles, usually in the form of "shadow cells," renal and caudate epithelial cells, more or less degenerated; a small or moderate number of pus corpuscles and the various kinds of casts, especially coarse granular, fatty, and blood casts.

BLOOD CHEMISTRY

It is to be remembered that nephritis is not a disease of the kidney alone but a generalized process with, as a rule, definite disturbances in the circulatory mechanism and changes in body metabolism. All of these contribute to changes found in the blood, consequently we do find considerable change in the composition of the blood when kidney function is disturbed. Within recent years through the work of Myers, Folin, Wu, and others, they have made possible an accurate determination of substances in small quantities of blood and hence we have been able in the clinic to make repeated estimates and follow changes that occur during the process of the disease. Through this work there has grown considerable knowledge of what we

term the blood chemistry of nephritis. At present the knowledge obtained through laboratory efforts is most complete in regard to retention products.

According to Widal, nephritis may be divided functionally into two forms, the chloremic or salt retention type, or acute nephritis where the chlorides are not fully eliminated and edema results, and the azotemic, nitrogen or urea retention type. Most authorities now agree that the kidney does not necessarily secrete urine, but filters it. When this filter is damaged and fails to eliminate normal concentration of urea and similar bodies, it must be retained in the blood, for these products are not threshold bodies and are always found in both blood and urine. Normally urea nitrogen represents approximately 40% to 50% of total non-protein nitrogen of the blood. Consequently, we usually look to the urea nitrogen to be increased first, and it is the one that has been most generally useful in our study of nephritis, even more so than the total non-protein nitrogen itself. We know that urea in the blood is the product largely of the protein taken in the diet together with addition from the breakdown of the products of tissue protein. The kidney normally filters out this urea which is the ash of the protein products. In the normal individual urea nitrogen is about 12 to 15 mgm. per 100 c.c. of blood. In speaking of urea and urea nitrogen we must bear in mind that the normal figures for urea is 2.14 times that of urea nitrogen. Blood urea is usually recorded in terms of urea nitrogen. It is in the chronic or dry type where we find the highest figures of urea retention. In acute nephritis urea retention is about normal in the beginning while a little later it is usually above normal. Figures of 25 to 30 mgm. are common. With unusually high figures we find it should suggest a previously existing chronic nephritis. Usually we have an increased blood nitrogen and decreased output of 'phthalein with severe toxic symptoms or uremia. This is not always the case, as there may be uremia convulsions with practically normal figures for both. This emphasizes the fact that no single test is a sufficient index of renal function.

With blood urea determination as with 'phthalein estimations it is the trend of repeated tests along with other disturbances in the patient which are useful and not the single test.

Much attention is being paid to the

creatinin in blood in nephritis during the last few years. This substance is the one most easily excreted by the kidney and affected less by protein intake. Consequently, its increase in the blood stream is an indication of considerable renal insufficiency, normal being 1 to 2 mgm. Above 5 mgm. is usually indicative of death in a short time, except in acute nephritis with anuria. Usually very little change is found in creatinin until the urea finding be twice normal.

It might be mentioned that chloride is one of the "useful" blood substances and consequently has a threshold below which it is no longer excreted in the urine. In nephritis there may be a disturbance of this threshold. In acute nephritis we usually find a slight increase in the blood chlorides while there is edema. This falls to normal with the disappearance of the edema, but occasionally it rises without return of the edema. In subacute nephritis and in chronic nephritis with edema we find marked increase in blood chloride and this may continue to be high after there is any obvious edema.

Various degrees of acidosis occur in most cases of chronic nephritis when renal function is decreased and is termed as a retention acidosis. The acidosis in nephritis is due to a retention of acid phosphate. The excretion of this substance is a specific function of the kidney and does not in any sense parallel the excretion of nitrogen or sodium chloride. Some workers have found that with high blood phosphate there is a decreased blood calcium, and they suggest that the low calcium in the blood may have something to do with the production of hemorrhages and convulsions in severe nephritis. Acidosis more often is found in nephritis without edema, but may occur with edema if the end stages are uremic.

BLOOD SUGAR

It has been recognized for some time that many cases of severe nephritis show high figures for blood sugar. It has been shown that blood sugar levels may range from normal to 250 mgm. varying directly with the severity of the disease. Studies of sugar tolerance in nephritis show that in many cases there is a profound change in carbohydrate metabolism. The blood sugar curve after ingestion of glucose resembles the diabetic curve. With a marked interference with renal function, very small amounts of sugar or none appear in

the urine although the blood sugar may go over 200 mgm.

BLOOD COUNTS IN NEPHRITIS

Slight increase in leucocyte count is very often present in the earlier stages of acute nephritis and a differential count shows a slight polymorphonuclear cell increase. Any marked leucocytosis should always arouse the suspicion of the presence of some infection apart from the immediate cause of nephritis.

The average case of acute nephritis shows very little anemia, but with hematuria and a toxic condition moderate to fairly marked degree of secondary anemia may develop. The anemia is more striking in the chronic diffuse nephritis than in chronic interstitial nephritis, and if the red count falls below 2,500,000 it is considered of grave prognostic significance, indicating injury to the bone marrow. At first the hemoglobin red cell ratio is typical of secondary anemia type, but later the color index increases and will resemble that of pernicious anemia. However, it is noteworthy that many individuals with nephritis show a pallor quite out of proportion to the slight decrease in hemoglobin or red count. Occasionally this pallor takes on a sallow or lemon yellow cast suggestive of a hemolytic factor and still there may be no definite anemia demonstrable by blood counts or hemoglobin determination.

BASAL METABOLISM IN NEPHRITIS

Basal metabolism often is decreased in chronic nephritis with edema as well as in subacute nephritis. This group that shows a decrease in their metabolic rate show very little evidence of acidosis as measured by CO₂ in the blood. In lipid nephritis the metabolic rate is frequently as low as minus—20—30.

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A widely known Philadelphia physician who a few days ago ended his own life left an unusual kind of note for his wife.

Read this, and then draw your own conclusions: "It has been impossible for me to collect even the small bills owing me and rather than possibly cause some other person to prefer to take the same way out I would prefer that you make no attempt to collect my overdue professional accounts."

Quite remarkable, indeed that a man sorely pressed for money could on the brink of death have so great consideration for others who may possibly be in a similar position.

But that kindly doctor's act does recall what was said many years ago: "Greater love hath no man than that he give his life for a friend."—Philadelphia (Pa.) Inquirer, Nov. 6, 1933.

RENAL PATHOLOGY SEEN IN TOXEMIAS OF PREGNANCY

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For a long time I have been interested in the general problem of kidney disease in pregnancy. In the beginning it struck me that the various syndromes known as hyperemesis gravidarum, eclampsia, preeclamptic toxemia and nephritic toxemia all bore a close resemblance to certain clinical states seen in disturbances of the kidney. On studying the literature closely I have found that no real unanimity of opinion exists as to the true cause of any of these conditions, but that in all of them kidney symptoms play an important part. For instance, vomiting, albuminuria, hypertension, pus and blood in the urine, edema, retinitis, and oliguria are all seen in all the toxic states, sometimes more marked and sometimes less marked, but practically speaking always present. The vomiting cases may not show hypertension or pus in the urine, but generally do show albumin and often develop retinal changes. The eclamptic cases may not show hypertension or vomiting but usually do, and so on. The findings are common enough in any large series of cases, however, to point to a common origin for all toxemias, and that origin undoubtedly attacks the kidneys as soon as or before it does any other part of the body.

With this in mind I looked up the recorded autopsies in University Hospital and found three cases of pernicious vomiting and five cases of eclampsia. They showed the usual liver and kidney pathology: i.e., focal necrosis in the liver and tubular nephritis in the kidneys—and showed also a dilatation of the ureters and kidney pelves in six out of eight cases. With this data I began the urological study of kidneys in women coming into the hospital suffering from toxemia of pregnancy.

Last August I read a paper before the Southwestern Branch of American Urological Association reporting the kidney findings in a series of ten normal and fifteen preeclamptic or eclamptic cases. The findings were quite striking in that they showed predominant bilateral back pressure changes in each of the toxic cases, but only a unilateral change in the normal cases. Based upon these findings I predicated the following hypothesis as

to the causation of toxemias of pregnancy:

1. That the majority of pregnant women suffer from urinary back pressure with consequent reabsorption.

2. This condition produces: (a.) Normal morning nausea; (b.) Ureteral hypertrophy, which is completed at the end of the third month.

3. When ureteral hypertrophy is sufficient to carry on proper emptying, the nausea ceases.

4. When it is insufficient, the back pressure continues: (a.) To the same degree, causing lassitude, malaise, etc.; (b.) To a greater degree, with development of: (1.) Pernicious vomiting, or; (2.) Preeclamptic toxemia, or; (3.) True eclampsia, which is more or less sudden in onset.

5. Logically the remedy is to provide drainage for the urine thus impounded. If this can be done by conservative treatment well and good; if catheterization is necessary it should be used; if this is not possible, surgery should be resorted to.

Please remember that this is only an hypothesis, but at least is one which explains the known pathological facts of toxemias. It in nowise discounts the theory that purely nephritic women may suffer from uremic symptoms during pregnancy; nor does it exclude other sources of toxins such as the liver, the placenta, the pituitary gland, etc. So far as I know these structures may each give rise to toxic states, but at least I have seen no actual facts which could be interpreted as pointing to such an origin.

Today I wish to make a further report, totaling in all 13 cases of severe vomiting, 16 of preeclamptic toxemia and 11 of actual eclampsia. By actual eclampsia I mean pregnant women who became toxic and developed convulsions. The findings were the same as in the first series: i.e., in practically every case the ureters were elongated and tortuous or the kidney pelves showed more or less dilatation and blunting of calyces. To a urologist lengthening and tortuosity of the ureter means hypertrophy; and hypertrophy is a physiological response to increased work. Hofbauer, Stoeckel, Baird, Kretschmer, and other investigators have shown that there is an obstruction to the ureters at their lower ends during the course of most pregnancies. This is commonly accepted as the explanation for the development of pye-

litis of pregnancy, many of which cases are accompanied by vomiting, hypertension, retinal changes or even convulsions, and are indistinguishable from the so-called preeclamptic or nephritic toxemias.

The cases of pernicious vomiting have not been X-rayed but were drained by retention catheters for one to three days and obtained relief within a week or less, thus verifying the work of Rush and strengthening my belief that pernicious vomiting is essentially only a symptom of urinary back pressure.

The cases of preeclamptic toxemia and eclampsia have shown essentially the same findings. In several instances one kidney was found to be in a state of spasticity and secreted nothing while the other showed a marked dilatation with the urine under high pressure. Five of them were seen only at autopsy, three were drained just prior to further operative procedures, four were drained for relief of convulsions, one was drained for relief of hypertension, while one was drained surgically for the relief of sepsis and jaundice, three were cystoscoped after delivery while the others were cystoscoped once for the purpose of diagnosis.

RESULTS

As stated above the cases of pernicious vomiting responded to treatment within a week and were completely relieved of their vomiting. Only two were delivered prematurely, one of which was an untreated four plus Wassermann and delivered an infant with syphilitic skin lesions. The other did not miscarry but was brought in and bagged prematurely because she had a placenta previa.

The 16 preeclamptic cases are all living and are as well as could be expected in view of the pathology which was present in their kidneys. Five of them miscarried as follows:

Case 1. Four months pregnant, deeply jaundiced, suffering from high fever, pus, blood and albumin in the urine, enlarged and tender liver, and rapid pulse. She was cystoscoped and ureters catheterized but drainage was insufficient on account of kinked ureters. She was then operated upon and a right nephrostomy was done, showing the kidney to be seminecrotic. Drainage being thus established she made an uneventful recovery and the jaundice and other symptoms cleared up. I took the tube out of the right kidney and she began

suffering from pain as soon as the opening closed. I then attempted to replace the tube, causing her considerable pain, and failing to get the tube in the kidney. She then miscarried at approximately six months. I have seen her since and she is apparently perfectly well, having no kidney symptoms.

Case 2. Seven months pregnant and was brought to the hospital suffering from albuminuria and hypertension. She had had two previous miscarriages and her family physician was afraid she would have another. She was catheterized and the catheters were left in two days. The blood pressure remained extremely high and on the third day she passed a dead foetus.

Case 3. Was cystoscoped at about seven months and miscarried one month later. She had had two previous miscarriages at exactly this same stage of labor. No Wassermann was taken.

Cases 4 and 5. Were cystoscoped in the outpatient department for hypertension and albuminuria. One of them had G. C. She miscarried four days after cystoscopy and six weeks prior to term. The other one miscarried nine days after cystoscopy and about six weeks prior to term.

Of the eleven cases of eclampsia five were seen only at autopsy, while six had urethral catheterization. All were relieved of convulsions immediately in spite of the fact that no sedatives were given to two of them. In these water was withheld (Faye and Arnold), edema was reduced by magnesium sulphate and ureters were drained. Two patients who were at term delivered healthy babies a day or so after admission. Two others at term were delivered by operative procedures after being relieved. One case was at seven months, drained for four days, then delivered a premature infant which lived for a short time. She had had two previous miscarriages, was edematous and had a blood pressure of around 190 systolic. The other developed convulsions at six months, was catheterized for two days, was relieved, returned home and felt perfectly well for two months, then noticed that foetal movements had ceased and a week later delivered a dead foetus. Her blood pressure during these two months varied from 160 to 190 systolic, 120 to 150 diastolic. It dropped to normal ten days after delivery.

Summing up the entire matter, I have

found that ureteral catheterization has relieved every case of severe vomiting of pregnancy which I have had an opportunity to observe or follow. These cases are ten in number. Pyelograms and autopsies of 27 cases of preeclamptic or eclamptic toxemias of pregnancy have shown definite evidence of the changes which are commonly produced by obstruction to the ureters. Such cases as I have had the opportunity to treat have shown more or less favorable results depending upon the thoroughness with which I was able to establish drainage. One case in which jaundice and hepatic involvement was a marked symptom was promptly relieved of her liver symptoms by surgical drainage of the worst kidney.

The mortality in the series of cases thus wholly or partially treated, prior to delivery comprising 29 toxic cases many of whom were very ill, has been zero for the mothers. There have been 8 premature deliveries, which appear in such cases as have been studied to have been due to placental infarcts or abruptio placenta. In most cases they happened at a period so remote from cystoscopy that no causal relationship could in fairness be assumed, while in others the mother gave a history of having miscarried twice before—due no doubt to her toxic state. None of the normal cases miscarried; only one of the vomiting cases did, and that one was syphilitic. Of the other seven, two were among the eclamptics and would have been aborted by the most conservative obstetrician, while of the remaining five, two had had two previous miscarriages when no cystoscope had been used, one miscarried apparently because her kidney wound closed up and I tried without success to reinsert a drainage tube. The other two were cystoscoped in our outpatient department probably without sufficient sedation. I do not know.

The percentage of miscarriages among the total group was 21%; among the toxic group was 27.6%, while among the preeclamptic or eclamptic group it was 36%. When it is remembered that all mothers recovered these figures compare quite favorably with the standard 20% maternal and 40 to 60 percent foetal mortality as given by DeLee and Williams. The maternal mortality of eclampsia in Oklahoma City has been 19% and the foetal mortality as near as can be determined accurately has been 44%, where complete data is available in University,

St. Anthony, and Oklahoma City General Hospitals. It would appear, therefore, that my series of cases gives a mother a 20% better chance of living and only shows 36% miscarriages as compared with 44% when treated by other methods. I feel very sure that in any large series of cases the foetal mortality would be much less than it is in this initial group.

Conclusion: Based upon the intensive study which I have given the matter and the observation of the cases mentioned in this paper, it is my opinion that a very high percent of all the toxemias of pregnancy are directly and entirely caused by urinary back pressure. Most of these can be and should be treated conservatively and without instrumentation. In any case, however, which does not yield to such conservative treatment a skilled urologist should catheterize the ureters and determine the condition of the kidneys. The results of his investigation can then settle whether ureteral catheters are sufficient or whether surgical drainage of the kidney should be employed. By following such a rational plan maternal mortality from this cause will be practically ended while foetal mortality no doubt will be greatly lowered.

TABLE I.

		Bilateral Back Pressure Signs
Normal Cases	9	0
Hyperemesis	13	13
Preeclamptic	21	18
Eclampsia	6	6
Total	49	37

TABLE II.
Cases Drained

	Maternal deaths	Foetal deaths (Syph.)
Hyperemesis	0	1
Preeclamptic	13	5
Eclampsia	6	2
Total	29	8

—0—

WHICH COD FISH SHOULD BE USED FOR MEDICAL COD LIVER OIL?

"Zilva and Drummond" were the first to draw attention to the high vitamin value of oil prepared in Newfoundland, an observation that has been repeatedly confirmed."

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Mead's Newfoundland Cod Liver Oil and Mead's 10 D Cod Liver Oil with Viosterol are made from Newfoundland codfish exclusively.

1. J. Soc. Chem. Ind., 1923, 42, 185:205.

PREVENTION OF ENDEMIC GOITER*

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A discussion of the prevention of goiter hinges chiefly upon that type called endemic. The prevention and treatment is, in most instances, one and the same type. However, in a broader sense, it seems to me that one would surely have to consider along with these, those due to the lighting up of non-toxic or quiescent adenomas, and the precipitation of acute diffuse hyperthyroidism.

Although, in America, one does not see the end results of thyroid dyscrasia, such as have been perpetuated through numerous generations in Europe, most assuredly, this curse is steadily and insidiously on the march². The great danger which may follow unchecked thyroid deficiency perpetuated through generations, is admirably pictured by Mayo in his visit to De Quervaine's Clinic in Berlin. He states that he saw two institutions which were built as farm houses, for cretins, containing 700 and 500 patients, respectively. They were all adults aged from twenty to sixty years. He describes them as a group of human animals, incapable of speech, and making inarticulate noises, showing their displeasure as would a dog. Some were playful, and many of them happy, for the world troubled them but little. They were able to do much of the work about the farms³. America is a new country, let this condition go for several generations without goiter prevention, and we will have a repetition of this tragedy as abroad. But we do not have to wait for these tragic end results, such as cretinism and deafmutism, for today we are paying the price in a great toll of incipient hypothyroidism. It is a definitely established principle that there are varying degrees in any deficiency disease; the milder grade producing less definite and more obscure symptoms than those present in the advanced stages. Hypometabolism is now recognized as a disease entity, and is known to exert a selective action on the various systems and organs of the body; thus, producing symptoms which are characteristic of, and easily confused with, other conditions. For instance, where the

*Read before Section on Obstetrics and Pediatrics, Annual meeting Oklahoma State Medical Association, Oklahoma City, May, 1933.

blood-forming organs are involved, we may have anemias. In connection with the intestinal tract, one may have digestive disturbances and constipation. Dysmenorrhea is a frequent sequence of the effects of hypo-metabolism upon the generative system. And so in children, mild deficiency may be the cause of behavior problems or a mild degree of mental inertia⁴. Many of these make up our mental defects and criminals of that type who are devoid of mental powers sufficient to think clearly enough to solve their problems in a social manner.

It is apparent that a consideration of the etiology of goiter might throw some light upon this social problem. Poor living conditions and defective hygiene are unquestionably an element in the production of goiter. Fresh air, sunshine, good food, and nice climate are good goiter prophylaxis. There have been attempts by Dr. Marcelle Rhein of Strosberg, to establish a relation between avitaminosis and the production of goiter⁵. He has observed a number of soldiers affected with endemic goiter, and has found that goiter occurred almost exclusively among privates who ate a more or less restricted diet, while the officers and sub-officers who had greater freedom in the selection of their food, along with the civil population of the locality, all of whom had a common water supply, were not affected. It is his impression that a lack of vitamin A (fat soluble) is the factor which prepared the soil for the production of goiter. His contentions are further supported by the proposition that goiter does not occur in wild animals. But once they are placed in captivity without the freedom of choosing their foods, in many instances, they are observed to develop goiter.

Undoubtedly, there is much evidence pointing toward the part which infected waters play in the production of goiter. Much has been accomplished with regard to prophylaxis by giving our attention to the amelioration of potable waters in affected zones.

Shivers, in discussing the part played by the maternal influence, as an etiological factor in the production of goiter, sighted a family in which the grandmother, three of her daughters and two of her grandchildren had goiters. He further noted that this familial influence persisted in instances in which goiterous families left an endemic area and took up homes in other places, and their children born sev-

eral years later, were found to develop goiter. These children of mothers from an endemic region having a predisposition to develop goiter did not show goiter symptoms at birth, but developed them during childhood.

The proposition that goiter is purely an iodine deficiency disease, although hardly tenable in the light of our present knowledge of the condition, has much to be said in its favor. A study of the geographical location, shows very definite areas where endemic goiters are prone to occur. Briefly, they are on the great water sheds of both east and west coasts, about the Great Lakes region, and a belt across the lower portion of the Mississippi Valley¹. The peculiar location of these areas gives a possible hint as to the etiology of goiter. Is it possible that the years of constant drainage of these areas have taken from the soil certain essential elements of protoplasm, such as the salts of sodium, iodine, potassium and magnesium, and that a lack of available iodine in the environment has reflected upon the populace with the production of goiter; a hyperplasia of the gland, as a result of its attempt to produce sufficient iodine in the form of thyroxin, to meet the demands of metabolism?

Marine has shown definitely, the relation which iodine plays in thyroid hypertrophy, by his work on dogs. In his experiments he has shown that, following the removal of one lobe of the thyroid, if the iodine intake is restricted, a compensatory hypertrophy of the remaining gland results. This not being the case in the instances in which iodine was not restricted. Furthermore, a study of the iodine content in the thyroid gland in different pathological states, also points to the importance of iodine to the gland. The iodine content of the normal gland is .777 mg. per gram of fresh thyroid. In states of hyperplasia, it varies from .03 to .139. When, by the addition of iodine to the organism, a colloid or resting state is produced, the concentration is again raised to about .45 mg. of iodine per gram of fresh thyroid. Thus, it is shown that there is the least iodine per gram of thyroid, in the hyperplastic, or toxic states, and a progressively increasing amount in the moderately hyperplastic, or moderately toxic state⁶.

Fundamental studies by Crile upon the thyroid, have shown the tremendous importance of this gland, in the relation it

bears between the animal and the vegetable kingdom. In no place in the vegetable kingdom is there a structure analogous to it.

The action of the thyroid, through iodine, by means of its agent thyroxin, is the activator of animal cell mechanics. This fundamental importance of iodine is shown by his work on preparations of cerebellum and medulla. He found that cells, when treated with iodine, were increased both in conductivity and permeability⁹.

These few brief statements as to the etiology of goiter are, in many instances, contradictory, which only emphasizes the recognized fact that in the production of goiter, many elements are at play, and that this is a subject upon which there is much discussion and controversy, so much so, that one realizes that it is, practically, all speculation.

Some idea of the need of goiter prophylaxis in a given country, may be determined by a survey of the school children. This work, in many instances, has been accomplished by school physicians. In making this study, it seems there should be some standard by which the presence or absence of goiter in a given individual, can be determined. There is no hard and fast rule⁸. One or more lobes, and the isthmus should be quite easily palpable. A mere existence of a band of the isthmus, which can barely be palpated, seems to be no reason for saying that goiter exists. At the age of ten years, the necks of boys and girls are about alike. The outline of the muscles can be seen. At the age of fourteen, a girl has a rounded neck, made so by the developing of the thyroid gland. This is a normal condition, unless there are symptoms, or unless the enlargement is excessive. Occasionally, this condition is seen in a boy, and if so, the treatment is needed. After puberty, a girl may notice a fullness of the thyroid gland, which appears a few days before the period, and subsides soon afterward¹⁰.

The prophylactic treatment of goiter may be directed both against the community, and the individual. The measures to be instituted against the community in general, are as before mentioned, good food, sunshine, fresh air and general hygiene. General measures should be directed particularly against sources of contaminated water. There are many instances on record where the abandonment

of water, from infected sources with its goiter-genous tendencies, have changed the whole face of endemic communities¹¹.

The administration of iodine is, and probably will always remain, the keynote of goiter prophylaxis. In Europe, the distribution of iodine by means of iodized salt, has gained wide popularity. This method has not been found to be entirely satisfactory. If the addition of iodine to the salt is one part to 250,000, that concentration would probably be satisfactory in areas where the environmental deficiency is not great, while in other areas with lesser amount of iodine present in the environment, it probably would be ineffective. If higher concentrations are used, say up to one part to 125,000 or 1 to 100,000, those patients with idiosyncrasies to iodine, will immediately become affected. Furthermore, the blanket use of iodine in such concentrated doses has been found frequently, to light up quiescent adenomas. And another objection is that, undoubtedly, the best results have been obtained by the intermittent use of iodine. It is hard to conceive of a plan whereby trades-men could dispense this powerful medicine in an intelligent manner.

It seems to me that goiter prophylaxis aimed at the individual would give a more satisfactory result in the final analysis. Surely, goiter prophylaxis calls for a certain amount of diagnostic acume. For example, frequently, children are seen with fetal adenomas, and once these tumors are formed, iodine will not effect them. However, in this connection, one should mention that iodine given to the mother during pregnancy, will effectively prevent the formation of this type in the infant¹².

The management of the pregnant mother opens up another field. What may be accomplished by adequate management, from the thyroid standpoint, takes on some of the character and brilliance of the work done in toxemias of pregnancy. One must constantly keep in mind that cretinism may follow in the wake of low grade hypo-thyroidism. The basal metabolic rate of these women should be taken, and they should be carefully watched for dyscrasias of the thyroid gland. If a pregnant woman is suffering from hyper-thyroidism, she should be given iodine, that is, providing the toxicity is not of such a state, and violence, that operative interference is indicated. It is our opinion that those patients seen fairly early during pregnancy with a rapidly developing ful-

minating type of hyper-thyroidism, stand surgery well. It is rather generally agreed that women suffering from hypo-thyroidism should have both thyroid extract and iodine.²⁶

Dosage. As to the direction of goiter prophylaxis against the child individually, there are several preparations of iodine which are satisfactory. The simple administration of two grains of sodium iodide, twice daily, for two weeks, twice a year, for children under fourteen years of age, is acceptable. This is a safe dose²⁷, Syrup of hydriotic acid is a convenient way of giving iodine. Iodosterine is another satisfactory preparation. It contains .1 gram and should be given once a week.

In certain instances of thyroid enlargement in children between the ages of approximately ten to fourteen years, during the period of adolescence, when there is a great demand upon the thyroid gland, the method of Plumer, by the use of small doses of thyroid extract and iodine, has given marvelous results²⁸.

CONCLUSION

The result of prophylaxis by means of iodine, stands out very clearly. Kimball's comparative study of the prevention of goiter in Detroit and Cleveland show that, with the unity of all health agencies, much can be accomplished if the disease cannot be completely eradicated. He takes for his comparison, the difference between the two cities, Detroit and Cleveland. In Detroit, cooperation was 100%. In Cleveland, this was not the case. Detroit and Cleveland had respectively 36% and 34% goiters in boys and girls. In 1930-31 Detroit had 3% and Cleveland, 18%. Many similar examples in Europe and America could be catalogued as a proof that iodine is a positive agent in preventing goiter, and thus eliminating the stigmata so apparent in all countries where the disease is endemic and of long standing.

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NEW PRODUCT FOR DIPHTHERIA IMMUNIZATION

The Squibb Laboratories announce the availability of Refined Diphtheria Toxoid Alum Precipitated with the featured advantage that one injection is sufficient for the immunization of the majority of children against diphtheria. The efficacy of the preparation in immunizing against diphtheria is believed to be due to the fact that the alum precipitated toxin since it is relatively insoluble, is more slowly absorbed and remains in the body sufficiently long to produce adequately protective amounts of antitoxin.

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Squibb Refined Diphtheria Toxoid Alum Precipitated is prepared according to the method reported by the Alabama Board of Health for a single-dose treatment. It is marketed in 0.5 c.c. vials for immunization of one person, and in 5 c.c. vials containing sufficient material for the immunization of ten individuals.

ABDOMINAL PAIN IN PREGNANCY

Stuart B. Blakely, Binghamton, N. Y. (Journal A. M. A., Sept. 23, 1933), having found but two articles (in English) on abdominal pain in pregnancy, presents his clinical study of abdominal pain in 300 consecutive private obstetric cases. He deals only with the abdominal pain that is directly caused by or closely associated with the enlarging uterus or the pregnant state. He points out that abdominal pain in pregnancy may be classified as to anatomic origin, mechanism of production and location as felt by the patient. The anatomic origins may be grouped into (1) abdominal parietes, (2) uterus with contents and adnexa, and (3) extragenital organs and tissues. The pain may be of somatic or visceral origin and is caused chiefly by distention or contraction of the uterus; its source can usually be determined. Definite abdominal pain is complained of at some period by 85 per cent of pregnant women. The incidence of pain increases with each month up to the last, at which time there occurs a marked decrease. There is more pain in the lower than the upper part of the abdomen and in both more on the right side. Abdominal pain in pregnancy varies much in character and severity and is influenced by many factors. Pregnancy is not immune to any of the causes of abdominal pain.

BLOOD TRANSFUSION

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ENID

The history of the transfusion of blood is very interesting, but too lengthy to try to give in this paper. Anyone interested, can get a rather detailed account of it, together with the bibliography, in an article published in the *Annals of Medical History*, September, 1932, by Leo Zimmerman and Katherine Howell, Chicago.

Ancient peoples looked upon blood as the seat of living power. They apparently believed that it also carried with it the ability to restore youth, and also to impart the characteristics of the individual from which it came. It was used as baths, as medicine, and was also taken, not only in hopes that it might restore vigor, but that the recipient might in this way obtain the courage and other characteristics of the person or animal from which the blood was obtained. As far back as we have any records at all, man has had these ideas about blood.

The first transfusion of blood was supposed to have been done in 1490 on Pope Innocent VIII, by a Jewish physician, but there is nothing to substantiate the story that any attempt was actually made to transfuse blood. Mangus Pegelius mentioned the possibilities in 1593. Andreas Libavius, in 1615, advocated blood transfusion, and described a technique for doing it. After Harvey's discovery of the circulation of the blood in 1657, the first human transfusion was done in London. The first successful transfusion of blood was done about 1665 in England by uniting the artery of one dog to the veins of another. The first human transfusion was done about 1666 by Jean Baptiste Denis, in which a human being was given blood from a lamb. Denis is supposed to have done several transfusions of lambs' blood on human beings, and some of them were apparently successful, but a great deal of controversy was caused by it and transfusions were prohibited by law in France, and also in Parliament some time later. After this, the transfusion of lambs' and sheeps' blood was tried at various places over the world, but opposition in some places by the medical profession, the authorities, and the church seems to have stopped it for over a century.

Professor Rosa experimented with blood transfusions on animals in about 1783. James Blundel of London, apparently in about 1834, found that exsanguinated animals could be resuscitated by a transfusion of blood from the same animal. He declared that human blood alone was fit for human transfusion. He found that people could be transfused with a syringe and even advised a syringe with three valves. He succeeded in resuscitating several women following severe post partum hemorrhage, and apparently performed, the operation about eleven times. He also states that the transfusion of blood from one species to another was liable to be followed by death after some days. Following this, considerable experimentation was carried on. Attempts were made to prevent the coagulation of blood, and transfusions were done with defibrinated blood. Edward Martin collected 57 cases of blood transfusion for post partum hemorrhage with 45 recoveries, in 1859. About this time knowledge began to be acquired in regard to the nature of blood itself and by 1875, there was considerable knowledge of the agglutination of corpuscles of the blood, by mixing the blood of different species. In spite of this, in the latter part of the last century, there was again considerable use of animal blood, especially sheep blood, and its use in almost every conceivable type of disease. About 1880, salt solution came into use, and attempts of transfusion of any kind became rare.

Blood has been transfused in many ways; by the direct anastomosis of the blood vessels of the donor to the patient; by the use of the Crile cannula; the paraffin coated vessels of Curtis and David; the Kimpton and Percy tubes, and the Lindeman multiple syringe method. Various chemicals have been used to prevent coagulation. In 1914, Hustin of Belgium advocated the use of sodium citrate. We have, ourselves, tried four of them; the Percy tube, ordinary syringes, Lindeman syringes, and citrated blood. There is considerable disagreement about the method of choice, but we think the citrate method is much simpler, surer, and as efficient, and no more dangerous than any other. In the cases to be reported, this method was used.

It is obvious that careful selection of donors is necessary to eliminate the only great source of danger in blood transfusion. The donors are typed and those cor-

responding to the patient's classification are then matched with the patient's blood. Landsteiner, in the year 1900, demonstrated the presence of iso-agglutinins and anti-agglutinins in human blood. From Landsteiner's observations Jansky, in 1907, and Moss, in 1910, classified individuals according to the iso-agglutinins, placing them into four blood groups, designated as group 1, 2, 3, and 4. Group 2 and 3 are identical in the two classifications, but group 1 in Jansky's classification corresponds to group 4 in the Moss classification, thus the two classifications become confusing at times. To avoid further confusion, the societies of American pathologists, immunologists, and bacteriologists adopted an official classification in which blood is grouped according to the A and B iso-agglutinin contents of the red cells. In view of priority, the classification was named for Landsteiner. Red cells containing iso-agglutinin A are designated as group A, corresponding to Jansky class 2, and Moss class 2. Those containing iso-agglutinin B are designated group AB, and correspond to Jansky class 3, and Moss class 3. Cells containing both iso-agglutinins A and B, are designated as group AB, and correspond to Jansky class 4, and Moss class 1. Cells containing no iso-agglutinins are designated as group O, corresponding to Jansky class 1, and Moss class 4.

When typing and matching blood, there are certain sources of error to be guarded against, such as contaminating blood with that of another group, cold or auto-agglutination and rouleaux formation which may be mistaken for agglutination. Occasionally, blood may contain iso-hemolysins, but when present it usually goes hand in hand with iso-agglutinins; that is, serum containing iso-hemolysin will cause hemolysis of the red cells of the same group or groups which the iso-agglutinin of that serum will agglutinate. The agglutinin titer varies considerably among individuals and at different times in the same individual, so this, at times may be a source of error if high titer sera are not used for typing. Direct matching of blood will eliminate this source of error. The iso-agglutinins are established in the blood during the first two years of post-natal life and remain so throughout the span of life. Care should be exercised in grouping infants under two years of age, because the group characteristics may not be fully developed. There are occasionally encount-

ered, individuals belonging to the same blood group, who are incompatible when directly matched, so this procedure should be carried out except in extreme emergencies where time is a factor in saving a patient's life.

Since it was found that there was an agglutination of the red cells with the serum of different individuals, there was a tendency to attribute all of the complications of transfusions to this cause. However, there are numerous other causes. There are mechanical causes that can easily be accounted for. Agglutination of the donor's red cells is considered to be the cause of shock at the beginning of the transfusion. This theory has been generally accepted, although there are objections. In the first place, incompatibility of bloods as shown by Burham¹, Grove and Crum², and others, does not always cause shock, and on the other hand, reactions may occur in spite of the absence of iso-agglutination. In addition, the re-injection into the same individual of his own red cells may cause a reaction. The hypothesis of the existence of more than four groups has been advanced. According to another hypothesis, there may be an incompatibility of the blood platelets or of the leucocytes. It is known that the recipient's serum may become hypersensitive to a donor's blood and subsequent transfusions from the same donor have caused serious reactions, and some deaths have been reported. Subsequent transfusion from the same donor should be preceded by tests to determine hypersensitivity.

Sodium citrate has been considered to be non-toxic in the doses in which it is used as an anti-coagulant, although LeBlay³ has observed chills following the injection of two grams of this substance. The water used as solvent, when not freshly distilled and not of highest purity has been reported as a cause of reactions.

We believe there is another cause of reactions, and that is the grade of anemia. Patients showing marked degenerative grade of anemia without microscopic evidence of red cell regeneration, are prone to febrile and paroxysmal reactions following transfusion, and require more transfused blood to bring the patient's red cells to normal. This is evident in the degenerative chlorotic grade of anemia, but more marked in the degenerative stage of hyperchromic grade of anemia, particularly pernicious anemia. To illustrate, case

J. H. C., entered the hospital in December, 1928. Hematological examination showed a severe anemia of the degenerative hyperchromic, megalocytic grade, and after clinical examination, a diagnosis of pernicious anemia was made. Ten transfusions of 500 c.c. each were given before the red cells reached normal. He had marked post-transfusion febrile and paroxysmal reactions. Two years later, he re-entered the hospital and presented approximately the same degree and grade of anemia as before. Liver therapy was started and daily reticulocyte counts were made. On the sixth day the reticulocytes had increased from less than one-half per cent to 19 per cent, with other marked evidence of red cell regeneration, clearly indicating that the degenerative grade of anemia had become regenerative. He was then given transfusions of 500 c.c. each, every other day. Five transfusions brought the red cells to normal, as compared to ten transfusions required in 1928. He experienced no chills and not more than a very mild febrile reaction following any of the last transfusions. We believe that pernicious anemia cases should not be transfused until after they have been on liver extract sufficiently long to produce a change in the blood picture.

Transfused blood may cause not only a simple mechanical increase in cells, but in most cases it stimulates the blood forming tissues to increased regeneration of the patient's own red cells and platelets. Duke⁴ has shown that in purpura hemorrhagica, cases with no platelets in the circulation, a rise even to 10,000 per cubic millimeters quite definitely and beneficially influences the hemorrhages. Platelets above 30,000 or 35,000 in this type of purpura are usually associated with complete disappearance of the tendency to bleeding. The increase after transfusion, if only mechanical, persists for only a few days on account of the rapid destruction of the transfused elements, but if the formative tissues are stimulated, the increase is more or less persistent. One cannot hope, however, for any permanent increase of platelets after transfusion, but the transient results may be excellent.

There has been a good deal of speculation about the reactions following transfusions and I have seen them classified as follows: First, the hemolytic; second, the prolonged chill and high fever, without hemolysis; and third, moderate febrile reaction, with or without a slight chill. The

first type, the hemolytic, should not occur. It is due to an error in matching the bloods. We depend upon typing the blood only as a matter of record and to facilitate the procuring of donors, chiefly in the unusual types. All bloods are directly cross-checked, the donor's serum against the patient's cells, and vice-versa, and we think that if this is done by a capable man that this first type of reaction should be entirely eliminated. A rather large per cent of cases have some kind of reaction, and a rather considerable per cent have a rather severe reaction. There are many suggestions as to what this is due to, but we think this occurs in all types of transfusions, and is liable to occur after the introduction of any kind of substance into the circulation, even normal salt and glucose. These reactions are of no serious consequence with the possible exception of the very ill and almost moribund patients, in which type of case, a chill and rise in temperature might be sufficient to be serious. We think, from experience, that reactions are less liable to be encountered if the citrate solution is freshly prepared, if the blood is stirred gently, and only enough to keep it mixed with the solution, and if the concentration is kept up to about 3-10 of one per cent, instead of 2-10 per cent.

Transfusion of blood has been recommended for almost any known condition, but its chief benefits are to restore the bulk of fluid in the blood vessels, to increase the coagulability of the blood, to stimulate the blood forming organs, to provide oxygen carrying material, and possibly to furnish bactericidal properties. It is the best known treatment for shock and for hemorrhage. It is the quickest way to return an anemic patient to normal, and it seems to act, not only by giving the patient blood, but by stimulating him to make blood himself. It furnishes hemoglobin in carbon monoxide poisoning. We think the most benefit in infectious and debilitating diseases is due to the correction of the anemia and to the stimulating act of the blood itself, but occasionally, a very remarkable effect is produced, as for instance, in the following case. Some years ago I had in the hospital a little girl, a child of parents who were very good friends of mine, who was almost moribund as a result of peritonitis following a gangrenous appendix. The child was cyanotic, her temperature could not be gotten below 105 by any ordinary means

and her pulse could not be counted. She was practically comatose. Just before noon, I gave her, very slowly, 500 c.c. of blood obtained from a neighbor. Six hours later, the child's temperature was 102½, her pulse was fair, and her color was good. She was conscious and the next morning she was well on her way to recovery. One never saw a more quick response from antitoxin, in diphtheria. I afterwards found that the donor had had a very severe infection in the hand some months before, and I am quite confident that in this particular case, the donor's blood contained a high concentration of specific antibodies. I have tried the same thing several times since in peritonitis, sometimes I thought with benefit, and sometimes not, but never with any such results as this. I think too, that this is the type of case in which, had a rather severe reaction occurred, that it might have hastened the end.

Recently, a case of puerperal sepsis was brought to the hospital. Her baby was two weeks old and she had been very ill since the third day following delivery. Her condition was apparently very desperate, and since her hemoglobin was below 70, we thought a transfusion might help her. Improvement following the first transfusion was remarkable. The whole picture was changed.

We have several times given as much as 2000 c.c. of blood at one transfusion. These were in cases of severe hemorrhage, and the results were usually excellent. We have many times given 1000 c.c. at one time, but the ordinary amount given is 500 c.c. If there is need for increasing the bulk of the blood we believe indications are to give enough blood to do this. In other conditions where the bulk of the blood is more nearly normal as in anemias, we give about 500 c.c. and repeat at one, two, or three day intervals.

In looking up our cases, considerable difficulty was encountered because they were not indexed under transfusion, but under the condition for which they were transfused. Probably some of them were missed. The cases found number 255 patients. The number of transfusions is 865. The average amount of blood given at each transfusion is 590 c.c. plus and the average amount given each patient is 2080 c.c. plus. Thirty-eight per cent had no reaction. Forty-three plus per cent had slight reaction, and eighteen-plus per cent

had what might be classified as severe reaction. These figures on reactions are based upon the actual transfusion done and not upon the number of patients, and in classifying these cases according to reaction, we have regarded those cases who have had a feeling of chilliness with a rise in temperature some time during the same day to 100.5 as having a slight reaction, while those who had a chill or temperature of over 101, or both, as having a severe reaction. Of the 255 patients transfused, 78 died some time between the first day and the end of the second month. The deaths were not looked up beyond sixty days after the last transfusion. In classifying these cases, we have had much difficulty because many of them, without going into the individual history, were difficult to classify exactly as to the reason for transfusion.

The following reports are taken from the records from 1918 up to the present time.

PERNICIOUS ANEMIA

Number patients transfused, 22.
 Number transfusions given, 122.
 Average amount per transfusion, 580 c.c. plus.
 Average amount per patient, 3227 c.c. plus.
 No reaction, 40 per cent.
 Slight reaction, 45 per cent.
 Severe reaction, 15 per cent.

Number of deaths, 5.

Case No.	Year	Description
772	1921	Died 16 hours after 3rd transfusion.
154	1924	Died 24 hours after 28th transfusion over a period of two years.
858	1928	Died 23 days after 5th transfusion.
3504	1930	Died 2 hours after 4th transfusion.
2812	1930	Died 1 month after 4th transfusion of hemiplegia.

ANEMIA CASES, OTHER THAN PERNICIOUS

Number patients transfused, 57.
 Number transfusions given, 206.
 Average amount per transfusion, 570 c.c. plus.
 Average amount per patient, 2060 c.c. plus.
 No reaction, 39 per cent.
 Slight reaction, 38 per cent.
 Severe reaction, 22 per cent plus.

Number of deaths, 13.

Case No.	Year	Description
370	1920	Died 5 days after 1st transfusion.
712	1926	Died next day after 9th transfusion.
1565	1929	Died next day after 2nd transfusion. Moribund on entrance.
2694	1930	Died 21 days after 3rd transfusion, of hypernephroma.
2747	1930	Died 13 days after 3rd transfusion, of carcinoma.
3364	1930	Died 1 day after 2nd transfusion, of carcinoma.

- 323 1931 Died 2 days after 13th transfusion, of carcinoma.
- 2731 1931 Died 2 months after 4th transfusion, of carcinoma.
- 663 1932 Died 9 hours after 1st transfusion, of Hodgkin's disease.
- 599 1932 Died 4 days after 3rd transfusion, of intestinal Tb.
- 1360 1932 Died 9 hours after 6th transfusion, of intestinal Tb.
- 2 1933 Died 5 days after 2nd transfusion, of delayed shock.
- 33 1933 Died 24 days after 5th transfusion, of cardiac failure.

CASES OF SEVERE INFECTION, WHO WERE TRANSFUSED IN HOPES THAT THEY MIGHT GET SOME BENEFIT

Number patients transfused, 21.
 Number transfusions given, 55.
 Average amount per transfusion, 545 c.c. plus.
 Average amount per patient, 1430 c.c.

No reaction, 34 per cent.
 Slight reaction, 38 per cent.
 Severe reaction, 27 per cent.

Number of deaths, 17.

- | Case No. | Year | Description |
|----------|------|---|
| 470 | 1919 | Died 3 hours after 1st transfusion, of peritonitis. |
| 577 | 1919 | Died 4 days after 1st transfusion, of general septicemia. |
| 791 | 1922 | Died 15 days after 4th transfusion, of peritonitis. |
| 1173 | 1926 | Died 2 days after 1st transfusion, of empyema. |
| 708 | 1927 | Died 4 days after 13th transfusion, of bacteremia following carbuncle. |
| 1120 | 1928 | Died next day after 2nd transfusion, of peritonitis. |
| 1138 | 1928 | Died 17 hours after 1st transfusion, of peritonitis. |
| 2208 | 1928 | Died 21 hours after 1st transfusion, of peritonitis. |
| 514 | 1929 | Died 4½ hours after 1st transfusion, of peritonitis. |
| 1617 | 1929 | Died 53 minutes after 6th transfusion, of osteomyelitis complicated by pneumonia and septicemia. Moribund when transfusion was started. |
| 2197 | 1929 | Died 14 hours after 1st transfusion, of puerperal sepsis following abortion. |
| 213 | 1931 | Died 9 days after 2nd transfusion, of ileus. |
| 857 | 1931 | Died 4 hours after 1st transfusion, of septicemia following erysipelas. Hg. 14. |
| 237 | 1932 | Died 3 days after 3rd transfusion, of puerperal sepsis. |
| 252 | 1932 | Died 6 days after 4th transfusion, of sepsis and influenza. |
| 772 | 1932 | Died 1 day after 2nd transfusion, of peritonitis. |
| 1427 | 1932 | Died 2 months after 2nd transfusion, of urinary infection-complication of hypertrophied prostate. |

ECTOPIC PREGNANCY

Number patients transfused, 20.
 Number transfusions given, 70.
 Average amount per transfusion, 700 c.c.
 Average amount per patient, 2450 c.c.

No reaction, 48 per cent.
 Slight reaction, 31 per cent.
 Severe reaction, 21 per cent.

Number of deaths, 2.

- | Case No. | Year | Description |
|----------|------|--|
| 399 | 1919 | Died 5 hours after 1st transfusion, of ileus. |
| 1532 | 1929 | Died 7 days after 2nd transfusion, of embolus. |

Two of these cases were transfused on the table with blood recovered from the abdomen, one being given 800 c.c. and the other 1350 c.c., both making a good recovery.

HEMORRHAGE FROM THE STOMACH

Number patients transfused, 28.
 Number transfusions given, 111.
 Average amount per transfusion, 550 c.c.
 Average amount per patient, 2180 c.c.

No reaction, 37 per cent.
 Slight reaction 53 per cent.
 Severe reaction, 10 per cent.

Number of deaths, 5.

- | Case No. | Year | Description |
|----------|------|---|
| 289 | 1922 | Died 10 hours after 4th transfusion, of hemorrhage. |
| 925 | 1923 | Died 6 hours following 2nd transfusion, of burns. |
| 1096 | 1927 | Died 10 hours after 1st transfusion, of hemorrhage. Was moribund on entrance. |
| 3684 | 1930 | Died 6 hours after 2nd transfusion, of hemorrhage. |
| 1173 | 1931 | Died 24 days after 4th transfusion, of heart block. |

UTERINE HEMORRHAGE

Number patients transfused, 45.
 Number transfusions given, 144.
 Average amount per transfusion, 600 c.c.
 Average amount per patient, 1920 c.c.

No reaction, 35 per cent.
 Slight reaction, 43 per cent.
 Severe reaction, 22 per cent.

Number of deaths, 1.

- | Case No. | Year | Description |
|----------|------|---|
| 566 | 1922 | Died 16 days after 1st transfusion, of heart block. |

HEMORRHAGE FROM VARIOUS CAUSES, AND SHOCK

Number of patients transfused, 52.
 Number transfusions given, 126.
 Average amount per transfusion, 674 c.c.
 Average amount per patient, 1480 c.c.

No reaction, 35 per cent.
 Slight reaction, 50 per cent.
 Severe reaction, 15 per cent.

Number of deaths, 28.

Case

No. Year

630	1919	Died 3 hours after 1st transfusion of ruptured kidney.
552	1921	Died 8 hours after 1st transfusion, of injured spine.
344	1923	Died 5 hours after 1st transfusion, of hemorrhage.
531A	1924	Died 4 hours after 4th transfusion, of obstruction.
680	1924	Died 1 month after 4th transfusion, of sarcoma of the hip.
416	1926	Died 6 hours after 1st transfusion, of carcinoma of the bladder. Moribund on entrance.
922	1926	Died 18 hours after 3rd transfusion, of hemorrhage from rectal abscess.
1630	1926	Died 2 days after 12th transfusion, of carcinoma of the thyroid.
281	1927	Died 3 hours after 1st transfusion of acute dilatation of the stomach.
436	1927	Died 28 hours after 2nd transfusion, of ileus.
259	1928	Died 3 days after 2nd transfusion, of obstruction.
1032	1928	Died 4 hours after 1st transfusion, of goiter.
1667	1928	Died 3 days after 1st transfusion, of hypostatic pneumonia.
2025	1928	Died 2 hours after 2nd transfusion, of ileus.
2224	1928	Died 3 days after 6th transfusion, of pulmonary hemorrhage following pneumonia.
459	1929	Died 1 hour after 1st transfusion, of ileus.
800	1929	Died 15 hours after 1st transfusion, of shock.
1685	1929	Died 36 hours after 5th transfusion, of osteomyelitis of the spine.
3664	1930	Died 38 hours after 2nd transfusion, of gun shot wound.
3729	1930	Died 6 hours after transfusion, of gun shot wound.
4108	1930	Died 13 hours after 3rd transfusion, of embolus.
46	1931	Died 5 hours after 1st transfusion, of ileus. (54 inches gangrenous bowel removed).
332	1931	Died 4 days after 2nd transfusion, of embolus.
1182	1931	Died 2 days after 2nd transfusion, of a broken neck.
1461	1931	Died 2 hours after 2nd transfusion, of mesenteric thrombosis.
63	1932	Died 6 days after 5th transfusion, of pelvic infection.
960	1932	Died 2 days after 3rd transfusion, of gas bacillus infection.
1228	1932	Died 12 hours after 5th transfusion, of typhoid.
1361	1932	Died 3 days after 4th transfusion, of pneumonia.

Of these cases, two had ruptured livers as the result of an accident and were transfused with blood recovered from the abdomen, one receiving 550 c.c. and the other, 1200 c.c. Both recovered.

PURPURA HEMORRHAGICA

Number patients transfused, 6.
 Number transfusions given, 25.
 Average amount per transfusion, 500 c.c.
 Average amount per patient, 2080 c.c.

No reaction, 52 per cent.
 Slight reaction, 24 per cent.
 Severe reaction, 24 per cent.

Number of deaths, 4.

Case

No. Year

468	1923	Died next day after 2nd transfusion.
207	1924	Died 3 days after 7th transfusion.
404	1925	Died 14 hours after 3rd transfusion.
1305	1927	Died next day after 3rd transfusion.

MISCELLANEOUS

Case

No. Year

883	1921	Died 14 hours after 2nd transfusion, of pneumonia, following a fractured skull.
801	1926	Died 1 week after 1st transfusion, of diabetes.
338	1922	Died 2 days after 2nd transfusion, of fat embolism.

In analyzing these cases, we find no case in which death could be attributed to the transfusion, but in cases No. 3504, year 1930, No. 663, year 1932, No. 470 year 1919, No. 514, year 1929, No. 459, year 1929, and No. 1461, year 1931, all of whom were desperately ill, we think that the reaction following the transfusion may have hastened the end.

In conclusion: This is not a very large series of cases to draw conclusions from, but we are convinced that the safety in the transfusion of blood depends mostly upon the laboratory. It is a very safe and very useful operation. Indications for transfusion may be many but the chief ones are need of blood or need of more bulk in the circulation, but the amount of blood that the patient should be given, should depend entirely upon the amount which is needed. In our territory, we have had very little difficulty in obtaining donors.

DISCUSSION: *Dr. E. Eugene Rice*, Shawnee.

The importance of the transfusion of whole human blood cannot be over-emphasized as it is a surgical procedure that is very necessary for every physician, even the practitioner who performs only an occasional transfusion, to have at his command. It is safe. The cases of fatal reaction are rare if the surgeon's technique in typing and procedure are correct. About 10% have some reaction and occas-

ionally a severe reaction, anaphylactic in character, with the typical symptoms of shock occurs. It is a life saving measure. In severe acute hemorrhage it is an emergency measure and the indication for its use should be realized at once. In other conditions as the anemias, the purpuras, severe infections, shock, and many other conditions the results are often dramatic.

The methods of "direct" or "indirect" or the use of unaltered or citrated blood have received much attention, and I believe the method should depend upon the proficiency of the physician. Probably the use of citrated blood in the hands of the occasional user is the safest, although the direct method is quicker, often with less reactions, and needs less assistants.

Dr. Hudson has emphasized the importance of not only grouping properly the donor and recipient, but of the great necessity of cross-agglutinating or matching of the sera and cells. Blood should not be used that does not properly group and in which there is no agglutination in either direction.

Personally I believe the amount of any fluid given intravenously should be limited, and probably 800 c.c. at one time is the maximum, and that repeated small transfusions of 500 c.c. or less will accomplish more and not over load the heart and vascular system, rather than massive transfusions of 1500 c.c. and more.

Transfusion not only replaces mechanically the fluids lost, but it stimulates the blood forming organs, increases the blood platelets, increases the oxygen carrying cells, and often carries antibodies to overcome infection.

Dr. Hudson brought out an important point, that often the grade of anemia is directly proportional to the severity of the reaction following transfusion and I believe an attempt should be made to stimulate the blood forming organs before transfusions, as has been his practice, in the primary anemias.

Auto-transfusion as mentioned is very important as often the blood found in the peritoneal cavity will revive a pulseless patient, as it is available when needed without typing or delay. Thies has shown that there is no morphological change in this blood and no reaction should follow its return to the patient's circulatory system.



DOCTOR LESLIE MOORE

We are pleased to present, in this issue of the Journal, a picture of Dr. Leslie Moore, of Dallas, Texas, who was recently elected President of the Southern Medical Association, at their annual meeting in Richmond, Virginia.

All Oklahoma physicians are glad to congratulate the profession of Texas on the selection of Dr. Moore to head this great organization. The next meeting of the Southern Medical Association will be held in San Antonio, and a large attendance of Oklahoma physicians can be assured.

DEATH

William Wayne Babcock, 3rd, son of Dr. and Mrs. W. Wayne Babcock, Philadelphia; aged 8: Nov. 5, at Temple University Hospital, cause of death, blood stream infection.

The many friends of Dr. and Mrs. Wayne Babcock, in Oklahoma, will sincerely sympathize with them in this great bereavement.

Frank H. Lahey, Boston (Journal A. M. A., Sept. 23, 1933), presents his experiences with forty-five patients operated on for esophageal pulsion diverticulum. He has approached the diverticulum in all of his cases through a good sized left longitudinal incision. He states all the difficulties that he has encountered in operating on the forty-five patients for esophageal pulsion diverticulum and describes the measures he has employed to overcome them. Post-operative dilation in either one-stage or two-stage operation is necessary. The safety of the two-stage operation is attested to in this series by the fact that the forty-five patients have been operated on by this plan without a fatality. Whether one removes an esophageal diverticulum by a one-stage or a two-stage procedure, there will always be the possibility of the distortion of the esophagus at the pharyngo-esophageal junction. This results in obstruction to the passage of the bougie, and the exertion of any pressure on the bougie could easily result in perforation and a fatality. The author has insisted now for some time on the passage of bougies on a guide as a much more satisfactory and safe plan.

THE JOURNAL

OF THE

Oklahoma State Medical Association

Issued Monthly at McAlester, Oklahoma, under
direction of the Council

VOL. XXVII JANUARY, 1934 No. 1

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McAlester, Oklahoma.

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Medical Arts Building, Tulsa, Okla.

Entered at the Post Office at Muskogee, Oklahoma,
as second-class mail matter July 28, 1912.

This is the official Journal of the Oklahoma State Medical Association. All communications should be addressed to The Journal of the Oklahoma State Medical Association, 203 Ainsworth Building, McAlester, Oklahoma. \$4.00 per year; 40c per copy.

The editorial department is not responsible for the opinions expressed in the original articles of contributors.

Reprints of original articles will be supplied at actual cost provided requests for them is attached to manuscripts or made in sufficient time before publication.

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Failure to receive The Journal should call for immediate notification of the editor, 203 Ainsworth Building, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

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PRINTED BY HOFFMAN-SPEED PRINTING CO., MUSKOGEE

EDITORIAL

POST-GRADUATE MEDICAL TEACHING DISCONTINUED

In the last issue of the Journal there was published a brief history of post-graduate medical teaching in Oklahoma and a comment that it was hoped that the work might continue uninterrupted, however, it appears that this is not to be, as it has been necessary to discontinue this work for the present due to an action of the Board of Regents of the University wherein it is made compulsory that members of the various cults be allowed to register, pay fees and participate in Medical Post-Graduate courses. One of the cults insisted upon participation in the course in Internal Medicine and it was necessary

to discontinue the course as the members of the regular profession refused to attend under such circumstances and the members of the faculty refused to appear before mixed groups.

The Committee of the State Association on Post-Graduate Medical Teaching has asked to appear before the Board of Regents to request them to withdraw this objectionable demand but so far has not had such an opportunity, however, of this we can be assured, that there will be no compromise in the matter. If there is post-graduate medical teaching in Oklahoma the regular profession will dictate the policy governing this work. It may be discontinued for a year but rather this than any concessions.

Let every member feel that this is his problem and do anything he can to assist in bringing about a satisfactory solution.

At a meeting of the Board of Regents, January 8th, all support for Post-Graduate Medical Teaching was withdrawn. This will mean that if we have Post-Graduate Medical Teaching it will have to be financed by the State Association and this matter will be taken up immediately with the Council, hoping to have as little interference with this program as possible. Remember we will have a new Board of Regents in a year.

SOME LEGISLATIVE PROBLEMS

There is nothing more important to the citizenship of this State than legislation which will tend to their protection in matters pertaining to the prevention and treatment of disease.

Fundamental education is a prime requisite in the development of ability to practice the healing art and legislation making this a legal requirement is greatly needed in Oklahoma.

All applicants for license to practice any form of the healing art should be required to pass examinations before impartial boards in anatomy, physiology, pathology, chemistry, histology and hygiene.

A Basic Science Law should receive the united support of all thinking people.

A bill should be enacted in Oklahoma requiring that the Governor appoint the State Board of Medical Examiners from a list of names submitted by the Oklahoma State Medical Association; in this way we would be assured that the Board would al-

ways be composed of representative practitioners.

There are at this time nine bills pending in Congress, proposing to erect new hospitals for the veterans in various parts of the United States. All of these bills are pending in the House Committee on World War Veterans Legislation. In each instance some particular locality is asking for from one-half to one million dollars to be spent for this purpose, notwithstanding that there are hundreds of vacant beds in veterans hospitals at this time, and thousands of vacant beds in civilian hospitals, these same institutions using every honorable means to meet their expenses and keep their doors open.

There are four bills before Congress that propose to re-enact all public laws, granting medical and hospital treatment to veterans, giving to all ex-service men hospitalization and treatment for non-service connected disabilities. These bills were repealed by the Economy Act approved March 20, 1933. Should they remain repealed?

These matters of legislation are brought to your attention at this time for your consideration, then after you have decided as to the wisdom or folly of each proposition use your influence to bring about a proper consideration of the matter by your representative, either State or National.

A NEW YEAR'S MESSAGE

To every member of our Association. I extend New Year's greetings, with the sincere wish that throughout the year, the attainment of the aspirations of each of you far exceed your disappointments. At this season, when we are wont to review the past and resolve for the future, I think of a saying that was current among western pioneers a hundred years ago. Covered wagons by the hundreds wended their way slowly through a single pass in the Alleghanies and out over a winding road toward the westward. Often were to be seen, as sad souvenirs of the trek, the whitening bones of dead horses and dead men. There were so many of the human skeletons along the way that there came to be this folk-saying, "The cowards never started, the weak died by the way." To apply this incident of history as an allegory, cowards never started the study or practice of medicine, because both its study and practice demand diligence and

courage. Under present economic conditions, there is the inclination on the part of some to lose interest in maintaining the ideals of our profession, one evidence of which is the lapse of membership in regular medical organizations. It is my earnest hope that every doctor who is eligible, realize that you need your county and state societies and they need you. May there be none who were "weak and died by the way."

Fraternally yours,

T. H. McCARLEY, President.

ANNOUNCEMENT

A cordial invitation is extended to the medical profession of Oklahoma, Texas, Arkansas, Missouri and Kansas, by the President and Board of Regents of the American College of Surgeons, the Oklahoma State Executive Committee, and the Oklahoma City Committee on Local Arrangements, to attend the Oklahoma-Texas-Missouri-Kansas Sectional Meeting of the College at Oklahoma City on Thursday and Friday, February 22 and 23, 1934. An excellent two-day program is being prepared, consisting of well arranged clinics in general surgery, and eye, ear, nose and throat surgery at the local hospitals; clinical addresses, and scientific sessions in which a number of distinguished leaders in surgery will participate, and a hospital conference for the discussion of medico-administrative and other problems of interest to the medical profession, hospital administrators, trustees, and others. The sessions will be brought to a close by a large community health meeting at which the visiting speakers will talk to the people of the community on important health and hospital topics in the interests of scientific medicine.

This meeting will be of scientific value to every physician as well as affording an opportunity of becoming more familiar with the Hospital Standardization Movement which has done so much for the practice of medicine in all its branches, and which should be furthered to the fullest extent. Hospital problems are now of greater interest to the medical profession than ever before.

The Oklahoma City Committee on Local Arrangements is leaving nothing undone to make this a most successful meeting. A large attendance and a good program are assured. Further information pertaining to this meeting can be obtained by address-

sing Doctor LeRoy Long, 117 North Broadway, Oklahoma City, secretary of the committee on local arrangements.

Editorial Notes -- Personal and General

DR. J. R. WALTRIP former Coweta physician, has opened his office in Yale.

DR. S. W. REYNOLDS, Drumright, who has been ill with diphtheria is reported much improved.

DR. H. B. AMES, Alva, who has been ill at the Mayo Clinic, Rochester, is reported much improved.

DR. JOHN L. DORROUGH, Ardmore, who broke his right arm, in cranking his car, is reported much improved.

DR. R. M. ANDERSON, Shawnee, attended the meeting of the Southern Medical Association in December.

DR. AND MRS. R. M. HOWARD, Oklahoma City, spent a week at their ranch near Wheeler, Texas, in September.

DR. W. W. KERLEY, Anadarko, attended the Southern Medical Association, Richmond, Virginia, which met in December.

DR. L. D. CONN, former Okmulgee County doctor, recently of Hot Springs, Arkansas, has opened offices in Webb City.

DR. PAT FITE of Muskogee, addressed the Kiwanis Club of that city Tuesday, January 2, on the "New Discoveries in Medical History."

DR. E. S. KILPATRICK, Elk City, who received serious injuries when his car overturned while en route to Frederick, is reported improving.

DR. W. L. TAYLOR, Holdenville, is reported recovering from injuries received in an automobile accident, which occurred in Durant in late December.

DR. L. C. KUYRKENDALL, McAlester, became eligible for the hole-in-one club on June 1, 1931, but he experienced that thrill a second time when he scored a coveted ace on the No. 4 green of the McAlester Country Club course December 10, 1933.

News of the County Medical Societies

CUSTER COUNTY MEDICAL SOCIETY elected the following officers for 1934: Doctors T. A. Boyd, President, Weatherford; J. T. Frizzell, Vice-President, Clinton; C. Doler, Secretary-Treasurer, Clinton.

TULSA COUNTY SOCIETY met in December and elected the following officers for 1934: Doctors Ned R. Smith, President; R. M. Shepard, President-Elect; Russell Pigford, Vice-President; Carl F. Simpson, Secretary-Treasurer.

GARVIN COUNTY MEDICAL SOCIETY met in December and elected the following officers for 1934: Doctors Ray H. Lindsey, President, Pauls Valley; W. P. Greening, Vice-President, Pauls Valley; John R. Callaway, Secretary-Treasurer, Pauls Valley; L. P. Smith, Censor, Elmore; E. F. Taylor, Delegate

to the State Convention, Maysville; John R. Callaway, Alternate, Pauls Valley.

BLAINE COUNTY MEDICAL SOCIETY met December 14, 1933, and elected the following officers for 1934: President, Dr. A. K. Cox, Watonga; Vice-President, Dr. J. W. Browning, Geary; Secretary, Dr. W. F. Griffin, Watonga.

PUSHAMATAHA COUNTY MEDICAL SOCIETY elected the following officers for 1934, at their annual meeting held in December, 1933: President, Dr. H. C. Johnson, Antlers; Vice-President, Dr. J. Kirkpatrick, Tuskahoma; Secretary-Treasurer, Dr. B. M. Huckabay, Antlers.

HUGHES COUNTY MEDICAL SOCIETY elected the following officers for 1934, at their annual meeting in December: Doctors W. M. Taylor, President, Holdenville; S. H. Hamilton, re-elected Vice-President, Non; G. W. Diggs, re-elected Secretary-Treasurer, Wetumka.

PONTOTOC COUNTY MEDICAL SOCIETY had its regular meeting December 6, 1933, and elected the following officers for 1934: Doctors M. L. Lewis, President; M. M. Webster, Vice-President; Hervey A. Foerster, Secretary-Treasurer; C. F. Needham, Delegate to the State Medical Association; E. A. Canada, Oscar Miller and I. L. Cummings, Board of Censors; all of Ada.

BRYAN COUNTY MEDICAL SOCIETY met December 5, 1933, and elected the following officers for 1934: Doctors, H. B. Fuston, Bokchito, President; Charles G. Price, Durant, Vice-President; John T. Wharton, Durant, Secretary; J. T. Colwick and D. Armstrong, both of Durant and A. J. Wells, Calera, Censors; O. J. Colwick, Durant, Delegate to the State Medical Association; James L. Shuler, Durant, Alternate.

STEPHENS COUNTY MEDICAL SOCIETY elected the following officers for 1934, at their annual meeting in Duncan, December 26, 1933: Doctors Conner P. Chumley, President; E. C. Lindley, Vice-President; D. Long, re-elected Secretary-Treasurer; A. J. Weedn, Delegate to the State Convention; J. W. Nieweg, Alternate; A. M. McMahan, Censor; Wallace S. Ivy Committeeman on Public Policy, all of Duncan.

WOODWARD COUNTY MEDICAL SOCIETY met at the Baker Hotel, Woodward, December 15, 1933, for their annual meeting and banquet. Dr. Floyd Newman, Shattuck, presented a paper on "Blood Transfusion"; Mr. Crossett, District Relief Superintendent, spoke on his work. The following officers were elected for 1934: Dr. H. L. Johnson, Supply, President; Dr. D. W. Darwin, Woodward, Vice-President; Dr. C. W. Tedrowe, Woodward, Secretary-Treasurer.

CANADIAN COUNTY MEDICAL SOCIETY met in El Reno in December for their annual meeting and election of officers for 1934. After a 7:00 o'clock turkey dinner the following officers were elected: Doctors Joseph T. Phelps, President; P. F. Herod, re-elected Vice-President; Malcom E. Phelps, Secretary-Treasurer, all of El Reno. Three new members were accepted into membership, including Doctors G. G. Van Dyke, and Arthur W. Hill, El Reno; W. R. Miller, Calumet. Guests attending were Mr. L. W. Kibler Norman, and Doctors C. R. Roundtree, and G. H. Harrison, Oklahoma City, and Dr. J. E. Hughes, Shawnee, who entertained the Society with a lecture and moving pictures of his hunting trip in Alaska.

OSAGE COUNTY MEDICAL SOCIETY met late in December and elected the following officers for 1934: Doctors, C. K. Logan, President, Hominy; D. Werten, Pawhuska, Vice-President; M. E. Rust, Pawhuska, Secretary-Treasurer; Doctors Roscoe Walker, Pawhuska, T. J. Colley, Hominy, and P. H. Hemphill, Pawhuska, Board of Censors; Doctors E. C. Keyes, Shidler, and C. K. Logan, Hominy, Delegates; Doctors Roscoe Walker, Pawhuska, and D. Werten, Pawhuska, Alternates.

OTTAWA COUNTY MEDICAL SOCIETY met December 7, 1933, at the Miami Baptist Hospital for their annual meeting and election of officers. The following were elected for 1934: Doctors General Pinnell, President, Miami; J. S. Jacoby, First Vice-President, Commerce; H. K. Miller, Second Vice-President, Fairland; Richard Russell, Third Vice-President; Picher; J. W. Craig, Secretary-Treasurer, Miami. It was announced that their annual game dinner would be held at the Main Hotel, Miami, December 22nd.

OTTAWA COUNTY MEDICAL SOCIETY met in Miami, December 22, 1933, when they entertained with their annual dinner and home coming. The following scientific program was given: Dr. E. H. Skinner, Kansas City, presented a paper on "Cancer of the Cervix Uteri—Prevention and Treatment"; Dr. C. C. Dennie, Professor of Dermatology, Kansas University, Kansas City, lectured on "The Approach to the Treatment of Syphilis"; Dr. Fowler Border, Mangum, talked on "Thirty Years' of Active Practice of Medicine."

PITTSBURG COUNTY MEDICAL SOCIETY met December 21, 1933, for their annual election of officers. The program began with the showing of two films on professional topics at the Oklahoma Theatre. Brain operations were dealt with in the first film, while the other was on prostate hypertrophy. A luncheon followed at the Enloe Hotel. The following officers were elected: Doctors, E. H. Shuller, President; F. A. Bartheld, Vice-President, Delegates to the State Convention; J. A. Munn and C. M. Pierce, Alternates; F. M. Baum, V. H. Barton, and O. C. Rice, Censors.

JEFFERSON COUNTY MEDICAL SOCIETY met in Waurika December 4, 1933, for their annual meeting and election of officers. Dinner was served at 7:00 o'clock, after which the following program was presented: Dr. Everett Jones, Wichita Falls, gave a talk on "Ten Years' Experience with Radium in Uterine Conditions"; Dr. J. H. Reagan, also of Wichita Falls, spoke on "Electrical Treatments for Prostatic Conditions."

The following officers were elected for 1934: Doctors W. C. Burgess, Ringling, President; J. I. Hollingsworth, Waurika, Secretary-Treasurer.

BECKHAM COUNTY MEDICAL SOCIETY met in regular session at Sayre, December 13, 1933, and the following officers were elected for 1934: President, Dr. H. K. Speed, Sayre; Vice-President B. B. Roberts, Erick; Secretary-Treasurer, Dr. C. F. Jones, Erick; E. S. Kilpatrick, Elk City. Program Committee: Standifer, Chairman, Elk City; R. C. McCreery, Erick; E. S. Kilpatrick, Elk City. Program Committee Doctors D. H. Pitts, Chairman, Elk City; J. E. Levick, Elk City; P. J. DeVanney, Sayre. Dr. DeVanney was also elected Delegate to the State Medical Association, with Dr. V. C. Tisdal, Elk City, as Alternate.

COMANCHE COUNTY MEDICAL AND DENTAL SOCIETIES were entertained with a dinner and program, December 14, 1933, by the medical and dental staff of the Station Hospital, Fort Sill. Major James A. Bethea gave a lecture on "Fractures" with X-ray pictures; Major Herring of the Dental Staff lectured on Fractures and treatment of "Fractures of the Jaw," dwelling on the latest method of wiring the teeth to produce mobilization. Comanche County Medical Society extended the courtesy of associate membership to the personnel of the Fort Sill Medical Officers and the Staff of the Kiowa Indian Hospital.

MUSKOGEE COUNTY MEDICAL SOCIETY held its annual meeting December 11th, 1933, at the Muskogee Town and Country Club. A golf tournament was held at 1:30 P. M., and dinner was served at 7:00 o'clock. The following were present: Doctors Denny, Cook, Osborn, Witcher, Nesbitt and Wood of Tulsa; Doctors Tolleson and Little of Eu-fula; Doctors Stark, Glismann, and Hudson of Okmulgee; Doctor Roland, Oklahoma City; Dr. R. M. Church, Stilwell; Doctors Dyer, Welch, Bernard and R. L. Mitchell, Veterans Hospital, Muskogee.

The following officers were elected for 1934: President, Dr. Charles Edgar White; Vice-President, Dr. J. G. Rafter; Secretary-Treasurer, Dr. S. D. Neely; Censor, Dr. M. K. Thompson.

OKMULGEE COUNTY MEDICAL SOCIETY met in Henryetta December 18, 1933, for their annual meeting and election of officers for 1934. The scientific program was presented by members of the staff of the General State Hospital for insane at Norman. Dr. J. J. Gable, Assistant Superintendent was in charge and spoke on "Acute Neurasthenia"; Dr. Charles R. Rayburn on "The Circulation of the Central Nervous System"; Dr. J. L. Day on "Mental Hygiene." Dr. Ben Cooley of Norman was also present.

The following officers were elected: Doctors J. G. Edwards, Okmulgee, President; J. C. Matheney, Okmulgee, Vice-President; M. B. Glismann, Okmulgee, Secretary-Treasurer; J. C. Rembert, Okmulgee, Censor; F. S. Watson, Okmulgee, and H. D. Boswell, Henryetta, Delegates to the State Convention; G. Y. McKinney and M. B. Glismann, Alternates.

SOUTHERN OKLAHOMA MEDICAL ASSOCIATION met December 5, 1933, at Shawnee, and the following program was presented:

Luncheon, noon.

Address of Welcome—Dr. J. A. Walker, Shawnee.
Response—Dr. J. L. Holland, Madill.

Address on the State Medical Association—Dr. L. S. Willour, State Secretary-Treasurer-Editor, McAlester.

"Pathology of Encephalitis"—Dr. L. A. Turley, Norman.

"The Tubercular Kidney"—Dr. G. S. Baxter, Shawnee.

"Circulatory Diseases of the Extremities"—Dr. John Morey, Ada.

"Mental Hygiene Movement"—Dr. Carl T. Steen, Norman.

"Field of Mental Hygiene"—Dr. John L. Day, Norman.

The following officers were elected for 1934: Doctors J. W. Nieweg, Duncan, President; Alfred R. Sugg, Ada, President-Elect; Hervey A. Foerster,, Ada, Secretary-Treasurer.

SOUTHEASTERN OKLAHOMA MEDICAL ASSOCIATION held their twenty-fourth semi-annual session in Durant, December 14, 1933, and the following program was rendered:

"Some Common Causes of Pyrexia in Children," Dr. Arthur Jenkins, Durant.

Luncheon.

"Invocation, Rev. Wm. N. School, Pastor, First Presbyterian Church, Durant.

Address of Welcome, Dr. John A. Haynie, Durant.

Response, Dr. J. S. Fulton, Atoka.

President's Annual Address, Dr. J. C. Johnston, McAlester.

"Organized Medicine," Dr. L. S. Willour, McAlester.

"Eclampsia and Its Treatment," Dr. E. H. Shuller, McAlester.

"Some Defects in Medical Education," Dr. G. W. West, Eufaula.

"Tuberculosis in Childhood," Dr. F. P. Baker, Talihina.

"The Family Doctor," Dr. W. A. Tolleson, Eufaula.

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DOCTOR ARLINGTON R. HAVENS

Dr. A. R. Havens, Blackwell, 64 year old physician of Kay county died October 28, 1933, of blood poisoning.

Dr. Havens was born October 10, 1869, at Manito, Illinois. He graduated from Barnes Medical College in St. Louis, in 1900. He began practicing medicine at Nardin in 1901, and until he moved to Blackwell in 1917, where he practiced until the time of his death.

He was a member of the Masonic lodge, a member of the Blue lodge at Nardin and the Chapter and Commandery in Blackwell. He was recently appointed assistant city physician.

Dr. Havens is survived by his wife, one son and one daughter.

RESOLUTIONS TO THE DEATH OF DR. J. H. CAMERON OF HEALDTON

Whereas our friend and fellow member, Dr. J. H. Cameron, has been unduly called from us, we the committee of Carter County Medical Society wish to express our sincere regret on account of his untimely death. Dr. Cameron was a worthy citizen, a capable physician, and an honor to the profession. Our Society will miss him greatly in its deliberations. We desire to express our sincere sympathy to his devoted wife and trust that it may be in a measure, comfort in knowing that he was held in high esteem by the profession wherever known.

DR. F. P. VON KELLER,
DR. J. C. McNEES,

Committee Carter County Medical Society.

DOCTOR THOMAS S. CHAPMAN

Dr. T. S. Chapman, McAlester, died at Albert Pike Hospital, Monday, December 11, 1933, cause of death being cerebral hemorrhage.

Dr. Chapman graduated from the Louisville Medical College, Louisville, Kentucky, in 1896, and the same year located in McAlester, where he has lived during his entire professional career. He was married July 22, 1896, to Miss Nellie Owen Martin of Louisville. His wife, two daughters and one son survive.

Dr. Chapman has always been active in the practice of medicine, having been a member of the old Indian Territory Medical Association; and the Oklahoma State Medical Association since its organization. He was very active in all civic matters having been a member of the Board of Directors of the Izaak Walton League; he was mayor of McAlester, and for a short time was a member of the State Fish and Game Commission. He was a local member of the Elks Club, Indian Consistory, A. A. S. R., and for a number of years was an active Rotarian.

Funeral services were conducted Wednesday forenoon from the Chapman home, with Dr. Samuel R. Braden of the First Presbyterian Church officiating.

RESOLUTION

Whereas the Pittsburg County Medical Society having lost one of its members in the death of Dr. T. S. Chapman, who in his sixty-fourth year departed this life in the City of McAlester, where he had practiced his profession for more than thirty-five years, and

Whereas the Society feeling it's loss of one of the veterans in the medical profession, and especially in losing a distinguished member as Dr. Chapman, who was a leader in his community, and at one time Mayor of the city in which he so long resided:

Therefore the Pittsburg County Medical Society of Pittsburg County, Oklahoma, extends upon it's records this resolution in order that his memory shall not fade, and further extends the heartfelt sympathy of the society to the beloved family of Dr. T. S. Chapman, and to those who loved him.

V. H. BARTON

J. E. DAVIS

L. S. WILLOUR

Committee

DOCTOR OSEE C. BUTLER

Dr. O. C. Butler, Seminole, died October 27, 1933. He was born in Arkansas in 1886; graduated from the University of Arkansas, School of Medicine, 1917. He practiced in the State of Arkansas until 1926, when he moved to Seminole; here he was licensed to practice in 1929.

Dr. Butler was the president of Seminole County Medical Society in 1932; also a thirty-second degree Mason.

He is survived by his wife.

ABSTRACTS «» REVIEWS «» COMMENTS AND CORRESPONDENCE

EYE, EAR, NOSE and THROAT

Edited by Marvin D. Henley, M.D.
911 Medical Arts Bldg., Tulsa

Function of the Reattached Retina. P. C. Kronfeld, M.D., Chicago. Archives of Ophthalmology, November, 1933.

How successful a reattached retina functions after it has been detached for sometime is almost as complex as the action of the normal retina. A scientific solution of the function of the reattached retina will necessitate a vast amount of work on the part of the ophthalmologist, the psychologist, and the physiologist. Until this occurs a practical conception regarding the probable functional outcome of an operation for retinal detachment cannot be favorably introduced to the patient. In cases of partial but advancing detachment an anatomic cure or reattachment without any return of function is beneficial but the possibility of an improvement in function is the most influential factor. Approximately ten years ago, just prior to the first usage of the very important tear-searing operation the majority of observed reattached retinas were cases of so-called detachments during pregnancy. These cases generally show partial atrophy of the optic nerves with narrowed arteries, readily healing, and are not comparable to the idiopathic or traumatic detachment. When the retinal detachment occurs in the region of the macula and is of less than sixty days duration or when the detachment here is incomplete and over this length of time the outlook for a normally acting retina is good. The older the complete detachment the less likely the anatomic cure. Apparently no gross subjective disturbance is noticed by the patient since the majority of reports on reattached maculae do not mention the color sense. In a peripheral retinal tear or tears evidence of choroiditis is usually found in both eyes. There is also the possibility of damage due to surgery although the author states there are no definite signs of remote, permanent or noxious effects from uncomplicated operations such as are performed in this series. There is the possibility of an occasional intraretinal hemorrhage. Kronfeld reports six cases which have been studied with great scrupulosity. Four were treated with the electric cautery following Linder's modification of Gonin's perforating thermocauterization. Two were operated on after Weve's method. The duration of detachment to time of first operation varied from about three to fifteen months. Quantitative perimetry on the simplified Ferree and Rand peripheral retina. These tests show the differential perimeter and the Bjerrum screen with white targets is used for testing the light sense of the reattached threshold for intensities of light is considerably higher for a reattached than for a normal retina. There was no permanent damage done to areas farther than 3 mm. away from the area of operation for the perception of color. In some of the reported cases the color sense was good after operation. Metamorphopsia was not present at all in one and only slightly present in another patient. One patient could read the finest print. This series brings out among other

important points that the visual fields do not continue to improve for a year or two after the last operation as is claimed by some men in previous reports.

Fundamental Principles of Functional Hearing Tests. Robert Sonnenschein, M.D., Chicago. Archives of Otolaryngology, November, 1933.

While testing the hearing to determine the presence, location and degree of impaired hearing using such methods and appliances as the voice, acoumeter, watch, Koenig rods, tuning forks, resonators, whistles, monochords, audiometers and sounding rods the reaction of the patient must not be over-looked. After a minute examination of the ear and the nose, the nasopharynx and pharynx should be carefully examined and any anomaly affecting the ear, particularly by way of the eustachian tube should be considered. Septal deviation and any other form of nasal obstruction implicating the ear are not always indicative of intranasal surgery unless: (1.) There is difficulty in breathing; (2.) the drainage of the accessory sinuses is impeded; (3.) poor aeration of the eustachian tube caused by large tonsils; (4.) growths in the nasopharynx; (5.) or when a purulent discharge of the sinuses infects the tube. The monotone voice is one of the most practical and commonly used tests. During this test it is important that the patient does not see the speaker and that the opposite ear is well occluded. This is not easily accomplished but to overcome this difficulty a 2 or 3 meter speaking tube may be used. Following this test or by watch or acoumeter the ears may be inflated with the Politzer bag or preferably by way of the eustachian catheter. After inflation if a noticeable improvement is seen, further treatment will usually benefit the patient, but if no improvement is noticed as a general rule local treatment is of no use. The main tuning fork tests are the Weber, Schwabach and the Rinne. The Gelle test is used to ascertain the degree of fixation of the foot plate of the stapes. The Stenger test detects the malingerer of unilateral deafness. Among the several audiometers on the market the most highly developed is made by the Western Electric Company and includes the 1-A for research, 2-A for office, and the 4-A with a phonograph for testing school children in groups. By means of this audiometer a graph is made and loss of hearing is computed in sensation units. This is also possible with tuning forks but the time element makes them impractical. Eisenhower has perfected a complete range of forks made of magnesium-aluminum alloy which are rust and tarnish proof. It is not possible to authorize a fixed rule or measure for the human voice but by means of the methods and appliances mentioned one is able to arrive at an accurate diagnosis of the diseased condition of the sound perception and the sound conduction apparatus.

Nasla Papilloma With Report of A Case With an Enormous Nasopharyngeal Extension. Walter A. Wells, M.D., Washington, D. C. The Laryngoscope, November, 1933.

The patient's (age 70) chief complaint was a growth protruding from the right side of his nose and a lump in his throat noticeable when swallowing. This

had been present in some degree over a period of twelve years. There was no loss of weight; no pain; no enlarged glands and no evidence of metastasis. The tumor filled the nasopharyngeal space and extended backward and downward practically to the root of the tongue. It was pedunculated and had a dull red, opaque appearance. A section of the tumor was removed and microscopically examined. The report read: "The tumor is papillary carcinoma, probably of low grade malignancy." The tumor was treated with X-ray three times before it was removed surgically. The base of the growth was in the region of the ethmoids. Two postnasal tumors which were next removed were each the size of a hen's egg. X-ray or radium was advised to be used at regular intervals. One year after operation inquiry showed that the patient had been getting his X-ray treatments regularly and that he was still working at his trade of shoemaker. Just four cases of papilloma of the nasopharynx comparable to this one are reported in the literature and only about a total of one hundred cases of the entire nasal cavity. Those originating in the sinuses are usually pedunculated or cauliflower in character and are apt to recur after removal. Papilloma in the choana are nearly always single while those deep in the nasal fossa are multiple. A compressed nasal polyp is sometimes macroscopically mistaken for a papilloma. Papilloma of the larynx may have an infectious origin but this is not true of all nasal papillomata. Nasal papillomata are not classified as malignant growths but have an intermediate place between the benign and the malignant and many suddenly change into malignancy.

A Study of Twenty-four Cases of Neck Infection.
August L. Beck, M.D., New Rochelle, N. Y. *Annals of Otology, Rhinology and Laryngology*, Vol. XLII, No. 3.

Deep purulent infections of the neck are referred to in this report. This is a subject of common interest to the general practitioner and more especially to the laryngologist. These infections occur in all localities, at any age, and are about equally prevalent in both sexes. An intimate knowledge of the subject and applied anatomy of the neck is a duty and obligation on the part of the laryngologist since he is the consultant to the general surgeon and family physician. The greatest source of infection (45%) comes from in and about the tonsil and the second greatest etiological factor is in the pharynx (13%). Infection in the mandible following extraction of teeth accounted for 12%. Seven cases (29%) had as many different causes: following tonsillectomy, after removal of an adenoid, from injection of a local anesthetic, trauma from a bread crust, infected lymph node, infection of the capsule of the thyroid gland and inflammation of the petrous part of the temporal bone. There are three principle fascial compartments present in the neck: the parotid, the submaxillary and the pharyngomaxillary. The surgical approach to these is either through the submaxillary space after elevating the gland as recommended by Mosher or beneath the angle of the jaw directly without elevating the gland. The author states that in this series of cases over half were in the pharyngomaxillary space originating from infections in the tonsils and pharynx. An extension of the infection from the submaxillary into the pharyngomaxillary space is not uncommon. Trismus is one of the important signs pointing to an infection high up in the neck as in the parotid region. Submaxillary fascia infection is of dental origin and of another group the cause of which is sometimes not easily understood. The fas-

cial attachment at the hyoid bone is an obstacle to the downward progress of the infection. Those having a dental origin are given a good prognosis as the submaxillary space submits readily to drainage. Others of this group are not given such a good prognosis because of probable extensions and complications which are liable to occur. A carotid sheath infection is secondary to any of the infections in the above mentioned compartments. The surgical approach to a carotid sheath infection is an incision along the anterior border of the sternomastoid muscle as if for a jugular resection. The degree of sepsis of the patient must govern the physician since there may be a jugular sheath infection and an absence of local signs such as tenderness, swelling, etc. Blood cultures should be taken early during or immediately after a chill. Incision of superficial cervical gland abscesses is indicated when there is fluctuations or inflammation of the skin. In the deep gland suppurations sepsis and blood culture examinations are alone the important indicators. The most prevalent of the prevertebral fascia infections is the retropharyngeal abscess as found in children. Peroral drainage by a direct incision of the pharyngeal wall or an incision along the anterior border of the sternomastoid muscle lateral to the larynx as recommended by Dean usually produces prompt recovery. Buccopharyngeal, visceral or pretracheal fascia infections are the type which may sometimes be drained by internal incision, working through a laryngeal or oesophageal speculum. An important point is to avoid cutting the internal branch of the superior laryngeal nerve in the region of the pyriform sinus. The previously mentioned bread crust case was drained in this manner. External drainage may also be necessary in case of downward extension of the infection.

**DERMATOLOGY, X-RAY AND
RADIUM THERAPY**

Edited by William E. Eastland, M.D.
Lain-Roland Clinic, M. A. Bldg, Okla. City

Excretion of Bismuth in a Series of Clinical Bismuth Treatments, Torald Sollmann, M.D., H. N. Cole, M.D., and Katharine I. Henderson, A.B., (With the collaboration of J. V. Ambler, M.D.; H. F. De Wolf, M. D.; R. L. Howard, M.D.; E. C. Loomis, M.D.; J. E. Rauschkolb, M.D.; and Henry C Shaw, M.D.), Cleveland, the Archives of Dermatology and Syphilology, Vol. 28, Number 5, November, 1933.

This article is the result of a painstaking work by a group of scientists who had a desire to determine the comparative effectiveness of various bismuth compounds. This work was done in contrast to the usual methods employed for this determination; that is, the disappearance of spirochetes from the lesion, the reversal of the Wassermann reaction, clinical progress, and X-ray pictures to determine the degree of absorption of the product from the tissues. This investigation is based on the amount of various forms of bismuth injected into the body, and the elimination as determined by excretion from the kidneys and, to a certain degree, in the feces. To appreciate fully the painstaking methods and scientific accuracy, a personal reading of the article is necessary.

The authors compared the following bismuth preparations in regard to their urinary excretion: "watery solutions of sodium bismuth citrate and sodium bismuth tartrate, and a solution of the citrate in ethylene glycol; oily solutions (biliposol, quiniobine and bis-

mo-cymol); oil suspensions (the water-soluble sodium potassium bismuth tartrate and the water-insoluble bismuth subsalicylate)."

It was found that watery solutions of bismuth are absorbed more rapidly than oil solutions; that oil solutions are absorbed more rapidly than oil suspension of the tartrate; that the later is absorbed more rapidly than the oil suspension of the salicylate. Likewise, the excretion of these bismuth preparations is in direct proportion to their absorption.

Among the conclusions formulated it was found that watery solutions are quick in their action but are not sustained and, therefore, they necessitate much more frequent injections in order to maintain the same degree of bismuth concentration in the body. Oil solutions are absorbed with sufficient rapidity to be of clinical value, and are retained in the tissues over a much longer time, thereby exerting their spirochetal effect over a greater period of time. It was found that the oil suspension of the salicylate was eliminated extremely slow, and therefore was dangerous on account of the possible toxic element. To recapitulate, the oil solutions are of greater value in a practical clinical way as they are efficient spirochetocides and do not require that the patient shall have several injections each week of bismuth.

Of the oil solutions a study was made and the velocity of excretion and absorption is in the following order: biliposol, first; quiniobine, second; and bismo-cymol, third. These comparisons are extremely valuable inasmuch as they specifically mention the names of different products and thereby eliminate any question of doubt in the physicians's mind as to what product is the best; in other words, from their work the biliposol is the outstanding product.

Nickel Eczema, Leon Goldman, M.D., Cincinnati, the Archives of Dermatology and Syphilology, Vol. 28, Number 5, November, 1933.

The author of this article has carefully reviewed the papers of other men who have dealt with this subject. He calls attention to the possibility of error existing in reported cases by stating the other possible irritants were concerned, and that inasmuch as patch tests were not done with the suspected irritants the results would be inconclusive. The author reviewed cases of workers who were employed in plants that used nickel for plating different objects. He called attention to one shop in which 370 persons were employed in such work, and that in that number only 20 were able to continue for two years. The cases which he specifically reports are detailed. In the first, a nineteen-year-old boy had an extensive skin eruption after two days' work. Patch tests were done with various combinations of nickel salts and in all instances they were positive. A patch test with a metal coin of nickel was negative. In the second instance, a thirty-one-year old worker developed a dermatitis after three days' work in a nickel plating shop. Patch tests with nickel salts were likewise positive, as well as the test with a coin of nickel. In the first case, the patient gave a history of generalized urticaria, and in the second case the patient had had attacks of hay fever for the preceding two years. The author believes that this allergic predisposition may have influenced the patients to be especially sensitive to nickel.

He further calls attention to the possibility of people becoming sensitized to this metal by repeated contact with objects in which nickel is contained, such as the nickel in coins, the nickel in metal objects on clothing, e.g., the fastenings on suspenders. In near-

ly all instances where there is clear-cut evidence of nickel sensitivity such patients are permanently barred from following an occupation that brings them in contact with this metal.

Some Observations on the Eczematous Reaction Evoked by Skin Diseases, Andrew L. Glaze, M.D., Birmingham, the Southern Medical Journal, Vol. 26, Number 12, December, 1933. (Chairman's Address, Section on Dermatology and Syphilology, Southern Medical Association, 27th Annual Meeting, Richmond, Va., November, 1933).

In this article the author reviewed to a certain extent the changing ideas in regard to the etiology of eczema. He brings out the thought that although very little of a practical value has been determined, nevertheless progress is being made to a clearer conception of the disease. His example as quoted from Sabouraud concerning washer-women working side by side under identical conditions, in which one develops an eczema from soap and the other does not, is for the purpose of demonstrating that there is some endogenous factor present that makes the one woman susceptible. Glaze believes, along with others, that there is some biochemical or biophysical condition of cells in the body that behave in such a way as to predispose people to skin disturbances. As yet, only the surface has been scratched in regard to the understanding of cellular chemical changes.

TUBERCULOSIS

Edited By

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The Treatment of Pulmonary Tuberculosis by Hyperpyrexia, G. R. Duncan, E. P. K. Fenger, and A. B. Greene, The Amer. Rev. of Tb., December, 1933.

This is only a preliminary report and is of interest, not from the point of any tried therapeutic measure, but in speculation as to the results of further work and observations along these lines. Working on the well-known fact that the tubercle bacillus is thermolabile, the authors have attempted to damage the organism by artificially producing a state of hyperpyrexia in the host. To accomplish this means the authors have used hot baths. Their conclusions thus far are based on five cases treated by hyperpyrexia. The usual rise of the patient's temperature was to 104 by mouth, the technique, time, etc., is given in detail. In this limited number of cases they were able to demonstrate definite improvement. Such improvement, as shown by X-ray and clinical manifestations, was discerned in some cases in as short a time as ten days.

Further study of a larger series of cases well controlled will be necessary before any definite conclusions can be arrived at.

The Diagnosis of Carcinoma of the Lung, Louis Hamman, The Amer. Rev. of Tb., December, 1933.

Beginning, the author points out the rapidly changing attitude of the clinician towards carcinoma of the lung. Thirty years ago it was considered a rare disease and only occasionally diagnosed. Now it is frequently recognized and almost daily considered in diagnosis. Opinions differ as to the exact interpretation of the increased number of cases, some holding that

it is due to improved diagnostic procedures; while others maintain that there is a definite increase in the incidence of primary carcinoma of the lung.

As pulmonary surgery is making rapid strides in overcoming technical difficulties, it is of utmost importance that physicians be prepared to recognize early such conditions as are amenable to operation. In considering the diagnosis, the author divides its clinical manifestations into three groups: (1.) Instances in which the pulmonic growth is secondary to a primary cancer located elsewhere. (2.) Instances in which the primary growth is in the lung, but the first clinical evidence of its presence comes from metastases to distant organs. (3.) Instances in which the primary growth is in the lungs and the earliest symptoms come from its presence there.

In the first group, that of secondary metastatic carcinoma, the clinical manifestations are pointed out as extremely variable. Many times the lesions are revealed unexpectedly by the roentgen ray. In other cases, symptoms of cough, dyspnea, and symptoms not unlike those of pulmonary tuberculosis, are manifest. In the second group, the primary pulmonary growth is not discovered until conspicuous symptoms arise as a result of metastases to other organs. Most frequently encountered are metastases to the brain, bones and liver. Manifestations of the third group are clinically shown as: (1.) Bronchial irritation, or compression. (2.) A well circumscribed tumor. (3.) Pleurisy, usually with effusion; and (4.) a disseminated miliary infiltration.

Cancer arising in a large bronchus usually causes, first; an irritated paroxysmal, and often stridulous cough. Later, a clinical picture of bronchiectasis or lung abscess may present itself. These tumors are often diagnosed earliest with the aid of the bronchoscope. Cancer of the lung itself gives rise to a harsh irritative cough, usually accompanied by some pain. Haemoptysis is also a frequent occurrence. Such symptoms are often mistaken for tuberculosis, bronchial pneumonia, and chronic non-tuberculous pulmonary infections.

In differential diagnosis, the following conditions are considered in detail. Tuberculosis, mycotic infection, syphilis, and bronchial pneumonia. It is also pointed out that when abscess, bronchiectasis, or empyema occur, these complications, if not closely studied, may be attributed to other causes.

Spontaneous Pneumothorax, J. P. Palmer and R. B. Taft, Journal Amer. Med. Assn., February 28, 1931.

Five cases of spontaneous pneumothorax are reported in patients in whom no pathological change of the lung was demonstrable. All five recovered completely and returned to work. The most common etiological factor responsible for the development of spontaneous pneumothorax, taken as a whole, is tuberculosis. Records show this to be the cause of about 80 to 90 per cent of the adult cases and 40 to 50 per cent of cases in children, the discrepancy being due to the fact that there are more cases in children due to acute infectious diseases. Various ideas have been formulated regarding the etiology of the idiopathic group. Some state that these cases are probably due to a tuberculous infection in which there are no physical signs and no positive roentgen evidence. The theory has also been advanced that a tuberculous process is present and causes the rupture, and that the collapse and rest of the lung allow this process to heal entirely without leaving any scar-formation. Others think the condition due to the rupture of an emphysematous bleb on the margin of the lung. Still

others think that probably there has been some inflammatory condition causing adhesions between the visceral and parietal pleurae and the unusual exertion causes this adhesion to be torn loose, thus causing a rupture. This type of case rarely ends fatally. The condition often occurs while the patient is at rest or even asleep. The uncomplicated cases usually clear up in from two weeks to two months but may last much longer. One case has been known to exist for twenty years. Recurrence of the pneumothorax is not uncommon. One case is reported in which there were eleven recurrences. In another there were eighteen recurrences during a period of eight years.

UROLOGY and SYPHILOLOGY

Edited by Dr. S. D. Neely, M.D.
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Chancroid: Its Prevalence; Its Treatment With Vaccines. Pardo-Castello, Havana, Cuba. Archives of Dermatology and Syphilology, August, 1933, Page 154.

The author discusses the prevalence and former method of therapy of chancroid, stating that until a short time ago chancroid was thought to be a strictly local condition, but that lately it has been shown to awaken a general systemic reaction with the possible production of antibodies. Pautrier states that Ducrey's bacillus may exist as a saprophyte in the genitals of women and acquire pathogenicity under favorable conditions; this explains its more frequent occurrence in men than women. Sailors seem to be the most frequent class of men infected. Nicolle and Durand have prepared a strepto-bacillary emulsion which when 0.2 c.c. is injected intradermally is specific in diagnosis of chancroid. Nicolle and Durand have prepared a pure culture of Ducrey's bacillus, and from this made a vaccine which is given intravenously in increasing dosage: 225,000,000, 335,000,000, 450,000,000 and 675,000,000 organisms per dose. In conclusion the author states that vaccine therapy is indicated in all cases of bubo, phagedena and phimosis with inaccessible chancroids. In uncomplicated chancroid local treatment by means of cauterization with pure phenol and dressing with iodoform powder is usually sufficient. Electrodesiccation followed by iodiform dressings gives good results. In inflammatory cases with secondary infection wet dressings of potassium permanganate or copper sulphate 1-1000 are indicated previous to cauterization; if the lesion fails to heal, vaccine therapy is indicated even in the absence of complications. Patients under treatment for chancroid should be kept ambulatory if possible, in order that their earning power may not be interfered with, but when the vaccine is indicated the loss of work due to the hospitalization is more than amplified by reduced duration of disease.

Therapeutic Efficiency of Bismarsen in Experimental Syphilis in Rabbits. George W. Raiziss and Marie Severac. Philadelphia. Archives of Dermatology and Syphilology, September, 1933, Page 389.

The authors state that bismarsen synthesized by one of them (G.W.R.), in 1924, is the result of an attempt to combine in one molecule two of the best spirochaeticidal elements, bismuth and arsenic. The bismuth content varies from 23 to 25%, the arsenic content from 13 to 15%. As a result of the experiments with serial injections on rabbits, they state it may be concluded that the curative dose in a series of twenty

injections is between 4 and 5 mg. per kilogram, while in a series of ten injections a dose of 10 mg. is definitely curative. The maximum tolerated dose of bismarsen given intramuscularly in albino rats is from 450 to 500 mg. per kilogram. This is an evidence of low toxicity. Fourteen syphilitic rabbits were cured by a single dose of bismarsen as judged by the method of popliteal node transfer. The minimum therapeutic dose was found to be from 10 to 15 mg. per kilogram. When treated by ten weekly or twenty semi-weekly injections of 3 mg. of bismarsen per kilogram, 4 animals were cured and 3 were not; sixteen animals treated with higher doses were all cured. The minimum therapeutic dose for a series of from ten to twenty injections was 5 mg. per kilogram, and for a series of ten injections, 10 mg. The minimum effective single dose of arsphenamine for a syphilitic rabbit, when given intravenously was 16 to 18 mg. per kilogram. The same administered intramuscularly was 20 mg. per kilogram. It appears, therefore, that bismarsen is as effective as arsphenamine in experimental syphilis in rabbits.

Studies of Urinary Acidifiers and Antiseptics in Relation to Pyelitis and Cystitis. D. E. Mitchell and J. M. Scott, University of Toronto. *British Journal of Urology*, September, 1933, Page 225.

This article is a report of clinical studies in urinary antiseptics and acidifiers which have been carried on in the departments of Surgery and Pharmacology, University of Toronto, during the past two years. Seventy to seventy-five cases have been closely investigated. In summary these authors state. (1.) Ammonium chloride, acid ammonium phosphate and benzoate are effective urinary acidifiers, but change of pH has no influence on infection. (2.) Hexylresorcinol, pyridium, hemiltol, have given no evidence of urinary antiseptic value. (3.) Hexamine in well acidified urine cures at least one-third of the cases of non-surgical pyelitis and cystitis. (4.) Hexamine is liberated at the kidney pelvis at least, and is as effective for pyelitis as it is for cystitis. (5.) We have no method for determining which cases will respond. (6.) Resistance to formaldehyde may be due to individual characteristics of the organism. (7.) Focal infection (colonic absorption) seems to have a place in the etiology and treatment of persistent urinary tract infections. (8.) Urinary infection in simple pyelitis of pregnancy persists and only disappears post partum.

Abstractors' Note: This seems to be in contradiction to the present belief of some, first, that some infections of the urinary tract can be overcome or at least benefited materially by varying the hydrogen ion concentration of the urine; Second, that the simple pyelitis of pregnancy can be terminated only with delivery. The subject of urinary antiseptics is in a very chaotic condition.

Spermatogenesis Following Therapy With The Gonad Stimulating Extract From The Urine of Pregnancy. W. L. Brosius and Robert L. Schafer, Detroit. *Journal A. M. A.*, October 14, 1933, Page 1227.

The authors report a case of complete aspermia with bilateral testicular atrophy following orchitis as a complication of mumps, and spermatogenesis repeatedly elicited on the administration of the gonad stimulating extract from the human urine of pregnancy, also aspermia following the removal of treatment. They state that this suggests the gonad stimulating extract from pregnancy urine stimulated spermatogenesis in a human being.

The Prostatic Problem. O. S. Lowsley, New York, N. Y., *Journal A. M. A.*, December 2, 1933, Page 1769.

The author reviews all known methods of handling the prostate surgically, and comes to the following conclusions. Vesical neck resection has a definite place in the armamentarium of the profession for dealing with certain types of enlargements at the vesical orifice. When successful this procedure is economical for the patient and gratifying to the patient. The field for its employment is limited. It is unwise to attempt this procedure on massive adenomatous prostates. It is illogical to remove partially a prostate filled with pus which is being absorbed, because the tubules are sealed off and it becomes a serious focus of infection. He refers to repeated mistakes done in tonsil work in same respect. This procedure is ideal for carcinoma of the prostate, small projections from the floor of the vesical orifice and fibrous bars. It is far from being an office procedure; the avalanche of statistics seem to indicate that many patients are being operated who do not need it. It is just as important to safeguard a patient suitable for vesical neck resection as any other prostatic case. All the usual procedures, preoperative tests and maneuvers for improving the patient's general physical condition should be performed. Vesical neck resection cases are subject to all the complications that occur in a prostatic series. Our mortality rate is 10.11 per cent in eighty-nine cases, or about same as suprapubic prostatectomy.

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
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The Treatment of the Bleeding Breast. J. M. Wainwright, M.D., Scranton, Pa. *The American Journal of Cancer*. Vol. XIX, No. 2, October, 1933.

This author presents two cases of bleeding from the breast. In one of these a complete mastectomy was done, and though whole sections of the breast were made, only hyperplastic tissue could be discovered. In the other a local area of hyperplastic tissue was removed and the patient subsequently developed a malignancy of the breast.

The object of the contribution is an attempt to prove the theory that the source of bleeding should be removed in all breasts where there is prolonged bleeding, either continuous or intermittent. If a palpable tumor is present, a local excision may suffice. If several tumors or diffuse thickening can be felt, or if no tumors can be demonstrated, the entire breast should be removed. All cases, no matter how treated, should be carefully watched.

He has also studied 400 histories of bleeding from the nipple, and his experience and that of most authors shows that about one-half of the patients who have bleeding from the breast have a malignancy. He points out that many men, such as Adair, Cutler and Bloodgood, feel that transillumination of the breast aids materially in making a diagnosis of duct papilloma. These authors feel that local excision is sufficient in such cases. On the other hand, Sir Lenthal Cheatele contends that the entire breast should be removed in all cases of hemorrhage from the nipple, because one never knows from clinical examination whether there is only one papilloma or many papillomata, or whether or not there is cancer. It may be pointed out, of course, that traumatic hemorrhage

from the breast is to be excluded from this consideration.

The author points out that bleeding is a symptom only, and does not establish in itself a presumption for a diagnosis of a malignant or non-malignant lesion.

He discusses the two situations in which bleeding from the breast will be found.

1. Cases in which there is a definite tumor. He, together with all authors, feels that all such tumors should be removed. He is not entirely convinced that local removal is sufficient in such cases, but the majority of men familiar with this subject think that, after careful examination and the location of only a single tumor, its removal and careful observation is sufficient.

2. Cases in which there is no demonstrable tumor are more difficult in determining the best procedure. He wisely feels in these cases that the entire breast should be removed, as the only proper safeguard.

It is pointed out that bleeding from the nipple is a rather infrequent symptom in malignancy of the breast, and usually arises from a duct papilloma.

—Wendell Long.

The Following Reports Were Made At A Meeting of The French Association For The Study of Cancer On June 19, 1933, Abstracts by A. Civatte, being published in *La Presse Medicale*, July 29, 1933.

1. Sarcoma of the Breast (*Sarcome du sein*).

Three cases of giant cell sarcoma of the breast were presented by MM. Hartmann, Th. Bertrand-Fontaine and P. Guerin. These tumors had developed at the sites of preexistent benign tumors. Clinically they were very malignant, recurrence after removal taking place quickly.

From a histologic point of view, some of the interesting findings were multinucleated plasmodia scattered through the sarcomatous breast. In one case there appeared to be an osteoid sarcome with deposits of ossein.

2. Metastases of Latent Tumors after a Traumatism (*Metastases de tumeurs latentes apparues apres un traumatisme*).

This report is made by MM. R. Huguenin and P. Foulou who had observed two patients where epitheliomata developed at the sites of traumas with haematomata in two and six months, respectively, after the injuries. While the histologic findings were conclusive as to the tumor being metastatic, it was not possible to find the primary growth in either case. The interesting biological query as to how long the local phase of a malignant tumor may last is mentioned. The reporters believe that there are clinical evidences of a state of cancerous "septicemia" before the appearance of metastatic localization.

The report ends with the important statement that trauma in these cases should not be looked upon as a real cause of malignancy, but only as a factor in metastatic localization.

—LeRoy Long.

Prevention of Cancer of the Cervix Uteri. H. S. Crossen, M.D., St. Louis, Mo. *American Journal of Obstetrics and Gynecology*, November, 1933, Volume XXVI, Page 686.

Dr. Crossen has discussed the history of the diagnosis and treatment of cancer of the cervix, showing the tremendous strides that have been made in the past 40 years, both in the more accurate recognition of the pathology and the more intelligent and effective treatment.

He has pointed out that the progress in the care of this disease has reached a rather stationary level in which the following circumstances are true:

1. Twenty to 25 per cent of the cases seen when treated by more or less standard methods are cured.

2. Early cases of cancer of the cervix limited to the cervix itself have from 80 to 90 per cent cure rate, but they are very rarely seen and constitute such a small number that it very little affects the fact that only 1 out of every 4 or 5 cancers seen are cured.

3. He recognizes that the efforts at early diagnosis have made some improvement, but emphasizes the fact that true early cancer of the cervix is symptomless, and he feels that we can hardly expect great progress in this direction. He considers that the newer methods, such as the colposcope and Lugol's iodine test, are hardly practical in a general utilization. He states very nicely that the first symptoms noticed by the patient do not in reality represent the early stage of the pathological process.

Realizing that the progress in the care of this disease has reached a stationary level in spite of a great deal of work, he feels that the problem lies almost wholly in the field of prevention to be controlled by 2 means; the work of the physician with his patients and the education of the public.

The basis for this preventive work lies solely upon the well known premise that all irritating lesions of the cervix must be properly treated so that they are eradicated rather than palliatively handled. This involves 3 major factors:

1. The thousands of patients who are receiving palliative treatment for chronic irritating lesions in the cervix giving them some symptomatic relief and a false sense of security.

2. Thousands of women who are treating themselves for a "little leucorrhea."

3. Many other women who have chronic irritation in the cervix without symptoms that would cause suspicion of local trouble.

The bulk of the remainder of this paper has to do with the work of the physician with his own patients.

Dr. Crossen emphasizes a feature quite familiar to all who are concerned about this problem; that it is not the specialist's particular concern and duty, but it is a matter where the physician, regardless of location and limitation of facilities, has the power to take an important part.

The details of effective work by the physician include the following:

1. The eradication of chronic inflammatory disease or irritation of the cervix. "Temporizing, palliative treatments do not remove the danger."

2. Patients in whom cervical irritation has cleared under treatment should be occasionally checked up by examination.

3. Patients who come for other conditions should be asked about leucorrhea and other evidences of pelvic disturbance in order that the required examination and treatment may be carried out.

4. Patients who come for other conditions and have no pelvic symptoms present one of the difficult problems in this cancer prevention. He writes rather fully upon this subject emphasizing the responsibility and opportunity that the physician has in tactfully insisting that all women, particularly between 35 and 55, should have vaginal examination in connection with all complaints.

5. How often should the local examination be repeated? He feels that we should concentrate upon a particular age group, certainly that between 35

and 55 being the most important, and that we should not make examinations too frequently so that we receive poor cooperation from the patients, nor too long apart so that we run risks. He, therefore, arbitrarily considered that local examinations should be made once a year.

The matter of education must naturally fall to the lot of organized medical groups and organizations with lay members who have been so helpful in disseminating reliable information on other health matters.

Comment: I am inclined to entirely agree with Dr. Crossen. There is no question that the care of cancer of the cervix has reached a standstill in progress. It is certainly extremely valuable to have proper education and early diagnosis which will be of invaluable aid, but I am afraid that the practical benefits of campaigns for early diagnosis will not be as striking as they theoretically should be. Consequently, some definite organized plan of attack in prevention will probably yield much greater practical benefits than any other course we may take at the present time.

—Wendell Long.

End-Results in Treatment of Pelvic Infection. Albert H. Aldridge, New York, N. Y. *American Journal of Obstetrics and Gynecology*, Volume XXVI, November, 1933, Page 705.

The author has very carefully collected a series of 1021 admissions to the Woman's Hospital in New York City of pelvic infections. This work was undertaken to determine how successful palliative treatments in these cases had been. The problem was considered from many angles and the data he has obtained is extremely valuable.

For our purposes the conclusions drawn summarize very well the situation as presented by this series of cases:

The author's conclusions follow:

1. Adnexal disease tends to heal spontaneously. There is no means of knowing which cases will heal and which may need operation. All cases should therefore have the benefit of conscientious palliative treatment before operation is considered.

2. In the series of 1021 attacks treated by palliative methods approximately one-half (48 per cent) either healed completely or became free from symptoms so that operation was not necessary. One-third (32.7 per cent) persisted after treatment with symptoms and palpable pathology. Some of these latter patients had to be operated upon as their symptoms could not otherwise be relieved. Approximately one-fifth (19.1 per cent) of the patients treated were never examined after being discharged from the hospital.

3. Operation for salpingitis is recommended in the chronic stage if palliative treatment has failed to relieve symptoms, and for the disability of attacks which tend to recur in spite of treatment.

4. The practice of operating to cure salpingitis in the acute stage of the infection is absolutely condemned. Nearly one-half of such operations are unnecessary, if cases are first treated by palliative means. Furthermore, patients operated upon in the acute stage are subjected to unjustifiable mortality and morbidity, unnecessarily destructive surgery, and to too high a percentage of unsatisfactory end-results.

5. Operations in the chronic stage, even after recurrent attacks of infection, yield end-results which justify the greatest conservatism in the management of salpingitis.

Comment: This article is abstracted because pelvic infections form such a frequent condition to be treated, especially in younger women below 35 years of age. There has been a group of medical thought strongly advocating early operation in all subsiding attacks. There is little doubt in the minds of those who consider the problem seriously and have had large experience that such early operation is not only needless but decidedly unnecessarily destructive. If such operative procedure were entirely curative one would not feel so keenly upon the subject as he does when seeing young women with recurrent attacks of acute oophoritis or other ovarian disease in the single remaining ovary left at operation.

It is the duty of the physician to protect those who consult him, and when these young women present themselves with pain and symptoms their principal desire is to be relieved of the pain and symptoms as quickly as possible with apparent little regard to their future health and happiness. It is our duty to protect them by advising the course which we know to be far the better though not quite so spectacular nor agreeable to the patient who is having symptoms which she wishes to disappear immediately.

One hears it said that if one doctor refuses to operate upon these patients, someone else will do it at the patient's insistence. This has not been my experience, because most patients are cooperative if sufficient care is taken to properly inform them about the situation which they face.

—Wendell Long.

The Prolonged Bath in Therapy (Le Bain Prolongé en Thérapeutique) by Robert Clement, *La Presse Médicale*, October 11, 1933.

According to the author, Hebra, in 1861, noticed that small pox pustules inside the mouth progressed in a more favorable way than those on the skin. He believed it due to protection from contact with the air. Later he employed the prolonged bath in small pox and burns with suppuration. It was his conclusion that prolonged immersion hindered suppuration, relieved pain and made it possible to dispense with frequent dressings. One of his patients, a woman of 38, was continuously in a bath of 30 degrees C. for 504 hours without inconvenience.

The author remarks that the method is apparently not much used in France. He calls particular attention to its use in Vienna where, in connection with one of the large hospitals, there are 23 "beds of water" (lits d'eau). A metallic bed made of non-oxidizable material is placed in a tub which is surrounded by wood. It has a removable wood covering which serves as a table. The temperature of the water is kept at about 29 C. The water is changed entirely twice a day.

The prolonged bath is calnative, but it plays a curative role locally. In certain types of burns and in cases of extensive or multiple suppurating surface areas it prevents the retention of pus, arrests the progress of infection and hastens the elimination of necrotic tissue. Warm water stimulates granulation and favors regeneration of the epidermis. Thick, keloid or vicious scars are exceptional. But, above all, the bed of water (lit d'eau) assuages pain, facilitates change of position and abolishes complicated and painful dressings.

Prolonged balneation is sometimes employed in extensive and rebellious diseases of the skin, such as selected cases of pemphigus, suppurative dermatitis, pityriasis rubra of Hebra, arsenical dermatitis,

the accidents of curietherapy, and empetigo herpetiformis.

In surgery it may be of service in infected wounds after incision and drainage; in cancer with extensive surface sloughing; in stercoral fistulae, decubitus sores, fistulae of the urinary tract. Certain cases of polyarthritis seem to be relieved a great deal by prolonged warm balneation.

The contraindications are cardiac decompensation, pulmonary affections, and probably diseases of the kidneys.

Comments: Through the courtesy of Prof. Von Eiselsberg, I accompanied him on an inspection of the department of prolonged balneation at the *Algemeine Krankenhaus*, Vienna, several years ago. As indicated in this article, the use of non-oxidizable material in the construction of the tubs was emphasized.

The water supply was accurately regulated as to temperature and flow, and it was flowing into and out of the tub all the time in a very gentle stream. The patient was not permitted to stay in still water, one of the chief reasons for which, as explained by Von Eiselsberg, was that without continual inflow and outflow the temperature could not be kept uniform—a matter of the most profound importance. There must be a continual supply of water at exactly the proper temperature; otherwise the treatment is cruel, useless, harmful. The prolonged bath in Vienna (and this article is based upon observations there) is not employed generally in the treatment of burns. It is reserved for those cases in which there is extensive necrosis.

In short, the treatment as it is employed in Vienna is limited to patients definitely and carefully selected. In connection with a great hospital of several thousand beds there were, at the time the article from which this abstract is made was written, only 23 of these tubs or "lits d'eau." This alone makes it quite apparent that the use of the method is strictly limited.

—LeRoy Long.

Lipomata of the Labium Majus (Les Lipomes de la Grande Levre) by H. Mondor and A. Sicard, *La Presse Medicale*, September 30, 1933.

Since the labium majus and the mons veneris, which is a prolongation of it above, is rich in adipose tissue, it is astonishing that lipoma in this region is extremely rare.

Grosch, in 1887, found records of only three lipomata in 631 tumors of the mons veneris—about 0.47%—and 12 lipomata in 716 tumors of the labium majus—1.67%.

Kelly in 1894, was able to find records of only 20 cases of lipoma of the labium majus in all the literature, of which he furnished one.

Urich, in 1925, could not find any additional cases after Kelly's report, but the authors find that Ducuing, a few years before, reported a case of bilateral lipomata apparently arising from the fatty material about the round ligaments, descending into the inguinal regions of the labia majora, in a child of five years. He reported the pathology as congenital.

Added to this peculiar (and questionable) case are two by Sturmdorf, one by J. B. Murphy, two by W. H. Condit, one by F. de Gironcoli, making a total of 27 cases reported. To this number the authors add one more and give the case report.

An Armenian woman in good health and without any unusual antecedent history noticed, four years

before examination, a small tumor in lower left pubic region. It had grown slowly but progressively. It caused neither pain nor inconvenience, but was a little sensitive during the menstrual period.

At examination, there was a tumor occupying the left side of the mons veneris and the superior 2-3 of the left labium majus. It was slightly constricted about mid-portion, painless, well limited, flat on percussion, lobulated, soft. Its upper limits were near external inguinal ring, but there was no impulse on coughing. Its position could not be changed by manipulation. It was enucleated without difficulty. The pathologist, Madame P. Gauthier-Villars, reported it to be a pure lipoma.

These rare lipomata (in location) may be small or large, and may occupy any part of the labium majus. Schullein reports a case where the fatty mass extended into perineum and about the anus; Bruntzel a case where fatty infiltration about the vagina interfered with labor.

Sometimes they are of enormous size, one being as large as the adult head; another, reported by Capele, advanced into the perineum, destroyed it and then continued until it hung in front of the knees. Stiegel removed one at operation that weighed 10 pounds and Balls-Headly one that weighed 24 pounds.

Of the 27 reported cases, 8 were pediculated. The pedicle may be attached about the margins of the external inguinal ring, or about the mid-portion of labium majus. It appears that the enormous pendant tumors are pediculated (William Goodell, Emmet, Thompson).

From a histologic point of view, the tissue is adipose, sometimes traversed by trusses of heavy connective tissue and by fibrous tracts which explain the considerable weight of some of these tumors.

The youngest patient in the collected cases was 5 years of age; the oldest 61.

The diagnosis has not been made without difficulty. Kelly confused his case with a hernia at first; Balls-Headly thought at first of a cyst of Bartholin's gland. The most frequent error is to think of a cyst arising from the canal of Nuck.

—LeRoy Long.

Combination of Vaccinotherapy and Serotherapy in the Preventive Treatment of Tetanus (Combinaison de la Vaccinotherapie a la Serotherapy dans le Traitement Preventif du Tetanos) by Madame Charles Clavel and Charles Clavel, *La Presse Medicale*, November 1, 1933.

The authors apparently represent the conclusions in the Surgical Clinic of Prof. Tixier and the Bacteriological Institute of Lyon, they being associated with these important organizations.

They present proof that the average preventive dose of anti-tetanus serum is not always sufficient protection, and that, in any case, it protects for but a short time.

It is advised to administer both serum and vaccine, but never mixed together, or by use of same syringe.

The vaccine is designated as anatoxine. In the average patient $\frac{1}{2}$ c.c. is injected. Ten days later 1 c.c. and in a month 2 c.c.

Raymon and Zoetter are quoted to the effect that in this way an active immunity for 4 or 5 years may be established, and at the same time not run any risks of anaphylactic phenomena sometimes present after subsequent injections of serum. They wish it understood that serum is advised early, the vaccine being an auxiliary therapy.

—LeRoy Long.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D.
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End-To-End Approximation and Accurate Reduction As A Necessity In Fracture Therapy. Walter W. Ebeling. *Amer. Journ. Surg.* XVIII, 272, 1932.

The author discusses several interesting points which are worth considering, including the aims in fracture therapy, method of attaining accurate reduction, and a timely discussion of the satisfaction of the patient; also the criteria for sufficient reduction and the exceptions which may be met with, especially in the younger, and the necessity for accurate reduction, especially when the fracture is near or adjacent to a joint.

The author also emphasized the fact that the operating room is the place for the care of fractures, stresses the rigid asepsis, and approves of the Lane-plate technique.

The difficulty of the standardization and treatment of fractures is also discussed and the individualization of each fracture from the standpoint of the patient and his occupation, the age of the patient, the procedure indicated in reduction, type of fixation, the importance of after-treatment, and the consideration of the surgeon as an individual.

Reconstruction-Arthroplasty Operation For The Hip. Samuel Kleinberg. *Amer. Surg.* XVIII, 64, 1932.

The author describes an operation for reconstruction of the hip which is well conceived, practical, and a distinct advance in the treatment of the type of hip for which ordinary reconstruction operation has been done.

The operation consists of an osteotomy in the vicinity of the joint line and dislocation of the upper extremity of the femur which was then remodeled into a head and neck, the acetabulum having been cleaned out and enlarged by a reamer. Arthroplasty is then done after the manner of Campbell.

The advantages claimed for the operation are:

1. The pain is reduced to a minimum because of the smoothness of the new head and the covering with a double layer of fascia.

2. The use of the fascia assures a fairly extensive range of motion in the hip joint and the stability of the hip post-operatively is satisfactory.

Seven case reports with X-rays are included. These consist of three cases of ununited fracture of the hip, two cases of hypotrophic osteoarthritis of the hip, and two cases of ankylosis of the hip. Further cases and later end results would be valuable and interesting.

The Treatment of Compound Fractures. (A Specific Technique for the Prevention and Control of Osteomyelitis). By Fraser B. Gurd, B.A., M.D., F.A.C.S., Montreal, Canada. *Journal of Bone and Joint Surgery*, April, 1933. Vol. XV. No. 2. Page 327.

The author of this article has four years been writing on the subject of infections, particularly as they relate to compound fractures. His experience dates back to the time of the World war, when he was associated with Sir Robert Jones, on experi-

mental study of wounded soldiers suffering from compound fractures. His results were previously published in 1918. He found that when he returned to treating civilian injuries that he could apply very definite technique for the treatment of severe compound fractures and I think his results have been more favorable than the results in cases treated by other techniques in different clinics. For the prevention and elimination of infection and cellulitis, he employs the following techniques:

I. Avoidance of suitable pabulum for bacterial growth.

- (a.) Excision of devitalized tissue.
- (b.) Prevention of accumulation of inert exudate and blood.

II. Maintenance of circulation.

- (a.) Avoidance of interstitial tension.
 - (1.) Incision of skin and fascia.
 - (2.) Evacuation of exudate and transudate.
 - (a.) Obliteration of dead spaces.
 - (b.) Curtain drainage.
 - (3.) Prevention of adhesion of opposing wound surfaces—delay in sealing of wound.
 - (b.) Rest—fixation.
 - (1.) Plaster-of-paris.
 - (2.) Splints.
 - (3.) Traction.
 - (c.) Posture—gravity to assist venous and lymphatic drainage.

III. Chemical inhibition of bacterial growth.

- (a.) Saprophytic bacteria.
 - (1.) Iodoform.
 - (2.) Bismuth.
- (b.) Pathogenic bacteria.
 - (1.) Iodoform.
 - (2.) Bismuth.

IV. Stimulation of tissue reaction—serous and cellular.

- (a.) Iodoform.
- (b.) Bismuth.
- (c.) Liquid paraffin.

He does not hesitate to treat the mutilated extremity while the patient is being treated for shock. He uses novocain or avertin to fortify gas oxygen anesthetic, if necessary. The leg is cleansed with soap and water, then shaved and further cleansed with petroleic ether and well dried before the use of alcohol. He sterilizes the skin with iodine. The edges of the contaminated and crushed skin are excised; the underlying tissues are exposed and the debris cleansed from the deep part of the wound; incompletely separated bone fragments, large or small, which show any attachment to any tissue whatever are allowed to remain in place. The surface of grossly contaminated fragments is removed by means of the rongeur. Bleeding points are clamped and ligated and the wound as a whole is made more or less saucer-shaped or funnel-shaped in appearance, through the complete excision of traumatized tissue. Fractured bone ends are brought together, nerves sutured if severed and tendon ends approximated. The whole wound is then thoroughly washed with normal saline solution; the surface is dried and bathed in alcohol in order that the surface tissues may be dehydrated. With dry sponges the alcohol is removed and a paste which he calls Bipp, consisting of bismuth, iodoform and paraffin is applied.

(Note: Bipp or Morrison's paste was very popular in the British army service. Bismuth subnitrate 1 part, powdered iodoform 2 parts, and liquid paraffin 1 part). All parts of the wound are carefully reached and the bipp is wiped out, leaving no masses of the paste. Wide soft wiping gauze is soaked in liquid paraffin and a small amount of bipp is rubbed into it. This gauze is carefully and firmly packed into the wound, care being taken to fill all crevices and small cavities in the deeper parts of the wound. A few silk worm gut sutures are employed to partially approximate the skin edges. If traction is desired on the bone this is applied previous to the operation just described. He uses a wire through the os calcis or a Delbert sling. A thin layer of padding is applied from the toes to about the junction of the middle and upper thirds of the thigh and a circular plaster bandage is applied. Antitetanic serum is administered. The foot is elevated in bed about 8 inches. The cast may become discolored but unless the temperature goes above 103 degrees it is not opened. He never opens a window but if the wound must be inspected, he splits the cast on either side and removes the top portion. If no complications occur he inspects the wound for the first time at about eighteen days. Bone fragments which are devoid of granulations are removed. If packing has been adequate no purulent exudate will be found. The wound is again cleaned, bipp is carefully rubbed on the surface and it is packed with gauze as before and plaster-of-paris again is applied. This process is repeated until granulations completely fill the wound. He has not seen any poisoning from the iodoform except in cases where the size of the wound was more than 144 square inches.

AUTOPSY PROBLEM: ITS SOLUTION IN SMALLER COMMUNITIES

George W. Covey, Lincoln, Neb. (Journal A. M. A., Oct. 14, 1933), discusses the means by which a moderate sized city, without a medical school, can overcome the obstacles of not having a laboratory for the performing of necropsies. The method principally consists of sharing the expense for the maintenance of such a laboratory by the city hospitals. The author states that Lincoln physicians have by the method outlined developed such an interest in necropsies that over a period of fifty-three months they have done 657 necropsies with complete records, examined and recorded the histopathologic observations, and properly correlated the clinical and pathologic observations in a large number of them as a staff function of the hospitals. This constitutes a necropsy percentage of 15.5 on all deaths in the city for this period, which is over eight times the general average in the United States. The author concludes that there is great need of increasing the number of well done and well studied necropsies, especially in the smaller communities. To do this the medical profession must be made necropsy conscious and the necropsy must be made interesting and profitable to the physician. The cooperation of the mortician is necessary; it can be had and it is invaluable. A plan such as the one adopted in Lincoln is workable and could be adapted to almost any community.

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THE JOURNAL

OF THE
OKLAHOMA STATE MEDICAL ASSOCIATION

VOLUME XXVII

McALESTER, OKLAHOMA, FEBRUARY, 1934

NUMBER 2

SYMPOSIUM ON SYPHILIS

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A NEW METHOD OF PROTEIN FEVER TREATMENT IN RESISTANT SYPHILIS

MARQUE O. NELSON, M.S., M.D.
TULSA

Whenever a new method of treatment is shown to have curative effects not previously attainable by other means, its general adoption as a rule quickly follows and through extensive and frequent use it soon becomes the source of widespread benefit. In a measure this has been true of therapeutic malaria. Discovered about 1917 by Wagner von Jauregg, who for years had been trying the effect in various mental diseases of fever-producing agents of different kinds, it has since come into use in most of the larger communities of Europe and America. But, although it is marvelously effective in general paresis, it has not accomplished the vast good that would be possible if it could be put to earlier and more common use. The explanation for this probably lies mainly in the disadvantages associated with its use. For satisfactory malarial organisms often are difficult to obtain, the extent of the patient's reaction is not subject to control, at times making it necessary to terminate the infection before it has had time to work its benefit and there is frequently a complete or partial immunity to malaria that either prevents successful inoculation altogether or aborts the infection after a few paroxysms. In addition, the mortality rate associated with malaria therapy has been so

high as to make necessary some deliberation before using it, except in those apparently destined to hopeless injury without its salutary effect.

Accumulated figures on the subject indicate that malaria apparently cures about a fourth of the paretics treated by it and that it improves many more, even after mental changes have been present for several years. But if malaria could be put to common use early in cases resistant to other therapeutic methods, very few of the many now hopelessly damaged by syphilis (whether from involvement of the nervous system or any other vital part of the body) ever would have suffered organic injury at all. The disadvantages that have prevented malaria from taking a place among therapeutic measures applicable relatively early in the course of treatment have consequently precluded its common use in the very cases in which it would be capable of doing the most good. The need for an effective and more readily available and controllable substitute for malaria is therefore apparent.

In the consideration of malaria's effect on the body two features, the chill and the fever, are outstanding. Whether these are causally related to the beneficial effects induced by malaria or whether they are merely incidental products of the immunological reaction of the body is a question still unsettled. However, the element of fever has seemed so promising a clue to follow that all substitutes thus far proposed to take the place of malaria have

had the induction of fever as a main object.

The proposed substitutes for malaria are of three kinds: physical agents, such as hot water baths and diathermy; superimposed parasitic blood infections—relapsing fever; and substances injected into the body, such as colloidal sulphur and bacterial vaccines of various kinds. All these have disadvantages. Those of the first group, being purely physical agents, probably act mainly by physical means, with but little of the stimulating effect on bodily immunity processes that appear to be an important part of the therapeutic action of malaria. In addition diathermy, which has recently come into vogue, necessitates expensive apparatus that greatly reduces its availability in private practice. Relapsing fever has disadvantages similar to those of malaria—namely, that it is hard to obtain and is not controllable in its effects. Those of the third group, although having as heretofore used a therapeutic efficiency lower than that of malaria, have advantages in the matter of availability and control of dosage that seem to indicate the possibility they might be developed into practical substitutes for malaria that could be put to everyday use.

The bodily reaction to malaria is characterized most conspicuously by the production of chills followed by fever. The reaction to intravenous injections of foreign protein is similar, but with one difference: the fever attainable by foreign proteins as usually employed has not been as consistently high as that produced by malaria. While early in the course of treatment there may be no difficulty in producing a fever reaction of satisfactory degree, after a few doses the immunity to the vaccine acquired by the body is often so great that temperatures above 101 or 102 degrees cannot be produced without using doses large enough to cause severe shock.

The observation has been repeatedly made that in the main, the benefit derived from treatment by malaria is roughly proportional to the severity of the fever reactions. With this observation in view it appears probable that the therapeutic shortcoming of foreign proteins as compared with malaria might be explained by their lower capacity for producing fever—the fever being not the cause of cure, but an index of the severity of the immun-

ologic reactions taking place in the patient's body. It would seem likely, therefore, that if the fever-producing capacity of foreign proteins could be made to equal that of malaria, their therapeutic effectiveness might at the same time be raised to that of malaria also.

A NEW METHOD

Since September, 1929, I have used a method of injecting foreign proteins that will produce fever as high as the fever of malaria. With this type of treatment the fever reactions are controllable and can be regulated from day to day as the case in hand requires. The method is simple and is especially suitable for use in private practice—the substance injected being readily available and no expensive equipment or special facilities being necessary.

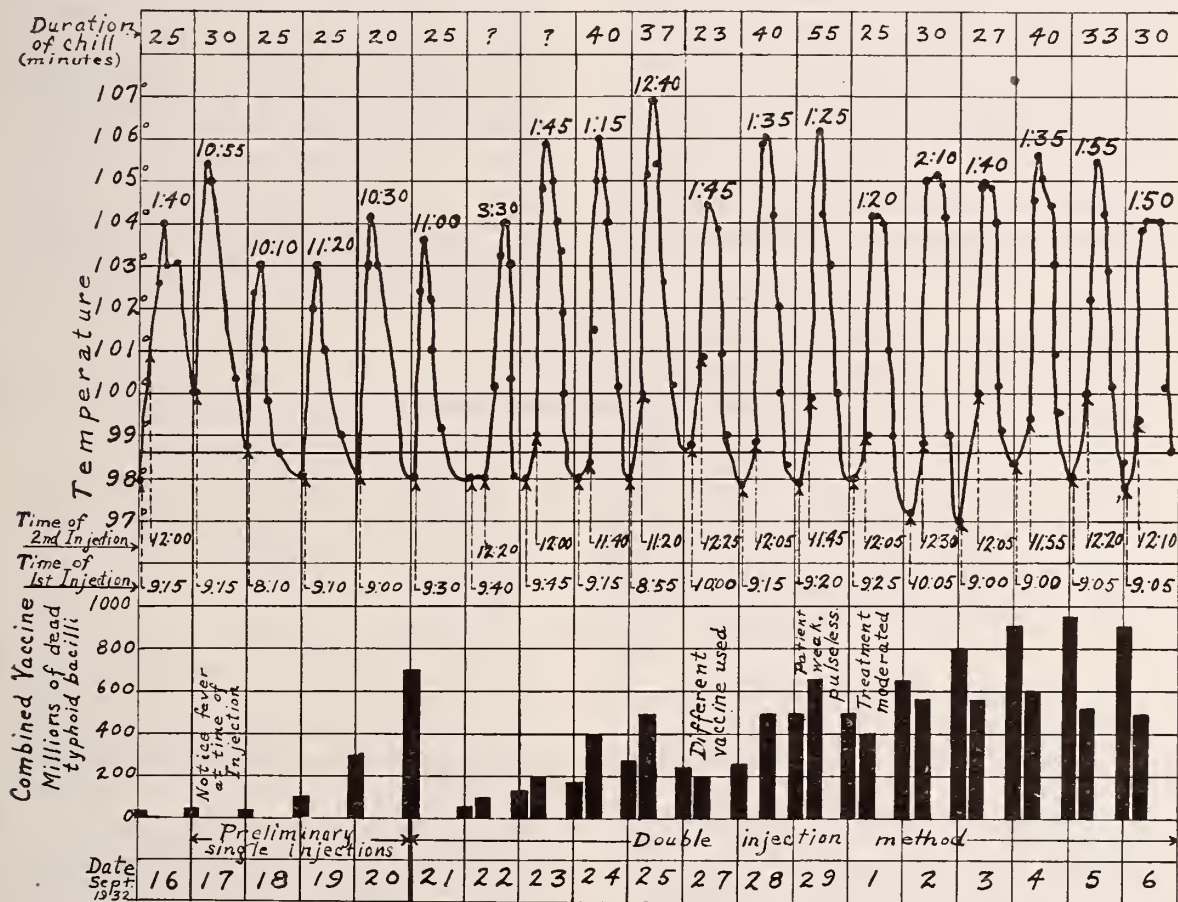
TECHNIC

As previously reported¹, the technic consists in giving two intravenous injections of combined typhoid vaccine for each fever paroxysm, instead of one. The injections are made from two to three hours apart, the second dose being given at the height of the fever induced by the first. The doses used are smaller than those that must ordinarily be given and with a little experience in observing reactions, the dosage necessary to produce the desired degree of fever in any case can be rather accurately estimated. In order to arrive at an idea of the patient's reactivity the first few days' treatment is given by the single injection method, beginning with a dose of about 50 or 100 million dead typhoid bacilli and doubling the dose each day, depending on the severity of the reaction induced. After a few days of trial in this way the double injections are started, using beginning doses about one-tenth as large as the last single dose. The first dose each day should be just large enough to produce a fever of about 99 degrees or 100 degrees. The second dose should be about the same size as the first but if by experience it is found necessary to make it larger, it should be correspondingly increased. This second dose has a peculiar "explosive" effect—it seems to ignite a charge created in the body by the first dose, causing the patient's temperature to mount to very high levels—107 degrees or more. As with usual methods, it is necessary to increase the amount of the dosage

each day, because of the immunity to the vaccine that develops in the body.

ILLUSTRATIVE CASE RECORDS

Case 1. A man aged 33 had been troubled by the lightning pains of tabetic neurosyphilis since 1925. He had been under treatment with arsphenamine and mercury from August, 1928, until July 1, 1930. At the first examination in 1928, the Wassermann reaction of the blood was strongly positive and the spinal fluid showed: Wassermann (Kolmer) 4441—, 38 cells, colloidal gold test 0000021000. After treatment, in July, 1930, there was no appreciable change—the Wassermann reaction of the blood was still strongly positive and the spinal fluid findings were: Wassermann (Kolmer) 44431, cells 42. He returned in September, 1932, and was given a course of protein fever treatment as shown in the following chart:



This is a chart of the treatment used in Case 1, which has been chosen because it illustrates well the details of technic of the double injection method and because it demonstrates the advantage of this type of treatment over malaria. The first six days of treatment were given by the ordinary single injection method, which in this case was carried on for experimental purposes longer than is usually necessary. It is seen that on September 29, treatment was interrupted on account of signs of cardiac failure in the patient, and resumed after a day's rest with milder paroxysms. With malaria such control of treatment would have been impossible—in this situation it would have been necessary either to stop the infection altogether, forfeiting any chance of benefit to the pa-

tient or allowing it to go on and running the chance, very serious under the circumstances, of having the treatment cause the patient's death.

The chart also shows that although towards the end of the course of treatment rather large doses of vaccine were necessary to produce high fever, when given singly these doses were not capable of inducing fever of more than 99 degrees or 100 degrees. Yet after the second dose, the temperature rose to 106 degrees and almost 107 degrees.

Although this case is reported for the purpose of illustrating technical details, it is interesting to mention that since the treatment was completed the patient has gained fifteen pounds, weighing more now than ever in his life, that he feels and looks more rested and has very little trouble from the old pains. Because of insufficient lapse of time since treatment, no reexamination of the spinal fluid has since been made.

Case 2. A man aged 56, had been troubled for several months by dizziness and nausea and by a feeling of impending syncope. There was some headache across the forehead and in the back of the neck. These symptoms came on when the patient was in the upright position and abated a good deal when he lay down. Vomiting had accompanied the nausea a number of times and according to the patient's description, was of projectile type. There was also a little numbness across the forehead and face. The patient had been confined to his bed for a week before he was first seen, because of these attacks, and it was impossible for him to walk or stand even a few seconds without having one of them. There were no localizing symptoms—no diplopia or disturbance of

vision and no speech difficulty. There was no pain anywhere and no difficulty in locomotion. There had been no real attack of unconsciousness and no emotional disturbance other than extreme nervous fear during the attacks of threatened syncope. The patient had not had any symptoms which were suggestive of gastric crises. There was no history of infection with syphilis.

The patient was a gray-haired, rather thin and nervous man who looked considerably older than his years. His weight was 125 pounds. The vision and visual fields were roughly normal; the pupillary reactions normal also. There was no sign of choked disc in either eye, no tremors of the facial muscles, the hearing was normal and in fact function of all the cranial nerves remained intact. The only positive finding in the nervous system was a diminution of the pain sense in several areas on the anterior surfaces of the lower extremities. The tendon reflexes were slightly increased, but there was no ataxia. The heart and lungs were apparently normal and there was no abdominal mass or tenderness. The Wassermann reaction of the blood was very strongly positive on two occasions and the spinal fluid findings were as follows: Wassermann (Kolmer) reaction 44442, 30 cells, colloidal benzoin test 123 330 002 333 000.

On account of the spinal fluid findings the patient was given a course of protein fever treatment with the double injection method. A chart showing the record of his fever reactions follows:

Preliminary Treatment By Single Injections

Nov. 22, 1932—	40 million	101.4.
Nov. 23, 1932—	200 million	104.6 ax.
Nov. 25, 1932—	200 million	104 rect.
Nov. 26, 1932—	250 million	104 rect.

Present Method By Double Injection

	First dose	Highest temperature	Second dose	Highest temperature
Nov. 27, 1932—	40 million	99.4 rect.	75 million	105 rect.
Nov. 28, 1932—	90 million	100 rect.	130 million	106.4 rect.
Nov. 29, 1932—	150 million	100 rect.	170 million	106.4 rect.
Nov. 30, 1932—	250 million	99.6	275 million	106 rect.
Dec. 2, 1932—	300 million	100.2	225 million	106.2 rect.
Dec. 3, 1932—	350 million	99.6	375 million	107.2 rect.
Dec. 4, 1932—	425 million	99.4	500 million	107 rect.
Dec. 5, 1932—	550 million	99.6	650 million	107.2 ax.
Dec. 6, 1932—	650 million	99.6	775 million	107.2 ax.
Dec. 7, 1932—	650 million	102 rect.	400 million	104.6 rect.
Dec. 8, 1932—	500 million	100.6 rect.	600 million	107 ax.
Dec. 9, 1932—	600 million	100.2	750 million	107 ax.
Dec. 10, 1932—	650 million	100.4	850 million	107.2 ax.
Dec. 12, 1932—	650 million	100	850 million	107.4 ax.

Since the treatment was given the patient has gained ten pounds in weight and is much improved in general health.

He is working every day and is no longer troubled by the dizziness and sensations of threatened syncope.

The results of treatment in cases in which the double injection method has been used thus far have been as good as those seen following treatment of similar cases by malaria. In several cases the clinical results have been almost miraculous. One of these was the case of a woman aged 37, who had been under treatment for syphilis for several years. She had had neoarsphenamine and mercury in comparatively large amounts during this period but in spite of treatment had lost weight and became more nervous. For a year she had been troubled by fits of excitement,

delirium and unconsciousness. The attacks had become more frequent during the six months before examination and had come on with little warning every ten days or two weeks. During most of them she was excited and maniacal and had to be forcibly controlled. The patient's height was four feet, eleven inches, her weight 110 pounds. On physical examination no signs of neurosyphilis were found. The Wassermann reaction of the blood had been consistently strongly positive since August, 1929, the time at which it was first taken. Examination of the spinal fluid December 14, 1930, showed: Wassermann (Kolmer) reaction 44442, 32 cells, colloidal benzoin reaction 333 330 033 333 200 (a strong reaction in the first or paretic zone). Treatment by means of the double injection method of giving typhoid vaccine was started in April, 1931, and consisted of 18 paroxysms of chill and fever. The temperature reactions in her case ranged from 104.6 degrees to 106.2 degrees. During this course of treatment

there was a loss of 25 pounds in weight. No treatment of any kind has been given since.

In this single case alone the effectiveness of the double injection method of protein fever treatment is incontestably demonstrated. During the two years since the treatment was finished the patient has not had a single attack like those from which she formerly suffered, she has gained 51 pounds in weight (she is now on a self-imposed reduction diet) and is apparently in perfect general health. She was advised to have a second course of treatment but has not been able to convince herself of the necessity because she feels so well. Besides the clinical improvement, there has been a marked change for the better

in the serologic tests also. A Wassermann test made of the blood October 14, 1932, was reported "two plus." Tests of the spinal fluid at that time showed: Wassermann (Kolmer) 41—, 3 cells, colloidal benzoin 123 233 333 321 000.

SUMMARY

1. The need for an effective and readily available substitute for malaria in the treatment of resistant syphilis is pointed out.

2. A method is here described that fulfills all the requirements for such a substitute.

3. The method is convenient and readily available and is capable of being put to general use early in the course of resistant syphilis, while it is still possible to prevent organic damage to the body from taking place.

4. Treatment of resistant syphilis by this method has brought about improvement equal to that observed in similar cases treated by malaria.

1. Nelson M. O.: An Improved Method of Protein Fever Treatment in Neurosyphilis, *Am. Jour. Syph.*, XV, No. 2, pp. 185-189, April, 1931.

THE INCIDENCE OF SYPHILIS

J. F. CAMPBELL M.D.
MUSKOGEE

The economic value of syphilis is readily seen when we consider that ten out of every one hundred people are reputed to have the disease. Although the majority of these cases may not be disabled, the number of deaths annually, the number of cases in the insane asylum, and the number of children born with the disease creates a problem whose solution challenges the entire medical profession.

According to a recent report by Dr. H. J. Morgan of Nashville, the annual number of cases diagnosed is 870,000, making a total of 7.3 per 1000. This however, does not include many who go undiagnosed because of expensive laboratory procedures or because they remain latent throughout their life, and do not consult a physician. Of this number less than one-half are diagnosed as early syphilis, leaving a large number to be picked up with late mani-

festations, having passed through the early infective stages unmolested.

Eli Grimes in the *Iowa Journal of Medical Science* reports the incidence of syphilis in general practice on 15,000 individuals, with a positive diagnosis on 674 or 4½%.

The extent of the problem of syphilis has been estimated by T. Parran and L. J. Usilton on case rates of 4.77 for males and 3.08 for females to be 643,000 cases.

A study of the rural negro in a Southern state indicated that as high as 24% of the entire population of more than one year of age showed positive Wassermans.

A survey of 1143 men examined at the Mayo Clinic showed an incidence of 4.2% for men and 2.6% for 514 women. Dr. Stokes considers this much lower than the average. The British Royal Commission gives a conservative estimate of 7-10% infected with syphilis. Investigators in other countries give estimates ranging from 12 to 74% of the population.

Statistical presentation of the problem of syphilis cannot ever be entirely accurate because of factors not at the observer's command. The number will vary, depending on the method of diagnosis; whether by Wassermann test, by clinical symptoms, or by a combination of both. Wassermann tests on bedfast patients vary from those on ambulatory patients, while tests on an entire population would vary from tests taken on those seeking medical aid.

In an attempt to survey the Wassermann's run at the Fite Clinic Laboratories during the past four years, the fact was kept in mind that the majority of these cases were ambulatory, having walked in for a general examination, and only a small per cent of these cases were stretcher cases or hospital cases. Since the Wassermann test is run routinely in all general examinations, irrespective of the common complaint, the majority of these cases were diagnosed at that time.

In this series of cases the Kolmer modification of the Wassermann test with cholesterolized antigen was used and checked with the Kahn precipitation test. The positives were proven with clinical findings or checked with the therapeutic test to eliminate all false positives. When doubtful positives were obtained, the blood

was rechecked until the reaction was either positive or negative.

The 2500 cases in this series includes the following:

1014 white males with 108 positives or 11.1%.

1985 white females with 88 positives or 8.5%.

182 colored males with 41 positives or 3.9%.

215 colored females with 63 positives or 30.5%.

This makes a total of 301 positive reactions on 2500 individuals or an average of 12%, irrespective of sex or color.

These figures agree with those of previous reporters, reporting on early syphilis in that all types of syphilis occurs more frequently in white males than white females, and more frequently in colored females than colored males. However, the variation is not as striking as in early syphilis.

The average age of syphilitic individuals at the time of diagnosis, is usually given as between the age of 20 and 30 years. The average age of 221 of my cases of acquired syphilis on whom the ages were obtained was 32.5 years. The youngest was a boy of 13 years of age, who acquired the infection from his parents at an early age and the oldest was a colored man of 70 years, who presented himself because of an aortitis. Many of theluetics were recurrent cases who had had treatment in their youth and the routine Wassermann test showed them still positive. This large number of recurrent cases together with the latent and undiagnosed cases was responsible for my large proportion of late cases (242 out of 301 positives were tertiary and central nervous system cases). Of the remaining number, 61 were diagnosed early syphilis and 10 heredito-syphilis.

The incidence of syphilis in a rural community of clinical patients agrees very well with statistics elsewhere. The County Health Officer of Muskogee County, Dr. E. H. Coachman, to whom I am indebted for the following figures, estimates that he receives reports on about 80% of the positive Wassermans obtained by doctors in the country. During 1931, 225 positive tests were reported and during 1932, 291 tests were reported. With a population of 66,000 in Muskogee County, the average

diagnosis rate per year is 3.9 per 1000 people.

CONCLUSION

An attempt has been made to estimate the incidence of syphilis in clinical patients by routine Wassermann tests. Statistics obtained show us that better than 50% of our cases pass through the infective stages undiagnosed. If this remains true, how hopeless are our efforts to control this spread. Routine Wassermann tests on every patient who comes to the office might help us in the solution of this problem as to diagnosis but competent and efficient treatment for every case must still remain an economic question.

OCULAR SYPHILIS*

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TULSA

I shall not review the voluminous literature on "Ocular Syphilis," but confine my paper to a report and discussion of two interesting clinical cases.

Case History No. 1: February 4, 1933. Mrs. H., age 73 years, white, widow. Ocular diagnosis: Interstitial keratitis (probably congenital).

Family History: Father died at age of 75 years of apoplexy. Mother died at 84 of heart trouble.

Past History: Weighed 2½ pounds at birth. Puny, practically an invalid until 12. Good education, had fits of temper.

Married at age of 21. Has five living children, one dead and one miscarriage. Oldest daughter is 52 and is in good health except for goitre, one child died soon after birth, several miscarriages. Daughter age 49 good health except bad temper, miscarriage four and one-half years after marriage. Daughter 41 had chronic interstitial keratitis in both eyes at age of 24, anti-luetic treatment with good results. Daughter 39 is in good health. Son 37 has good health, prematurely gray. Son died at 35 due to lobar pneumonia, had just been discharged as well from Vinita by Dr. Adams after six months' treatment for paresis. Husband died at age of 47 of paresis. After the first two children she was given potash and arsenic (anti-luetic treatment), and after the miscarriage continued treatment for two years. Malaria 7 years ago. Soon after miscarriage at 26, right eye became inflamed and she has been practically blind in this eye ever since.

Recent History: Since the first of the year she was becoming more deaf and was unable to repeat spoken word. In January she had a slight cold, which was followed by left eye becoming red and inflamed with diminution in vision.

Eye Examination: Right eye had reddish brown scar covering one-half cornea central and below. No doubt this was the result of interstitial keratitis at

*Read before Section on Eye, Ear, Nose and Throat, Annual Meeting Oklahoma State Medical Association, May 17, 1933.

26, or 47 years ago. No practical vision. Left eye; photophobia conjunctiva injected, slight ciliary injection, cornea diffusely clouded in upper inner quadrant, anterior chamber normal depth, pupil normal in size and iris appeared normal.

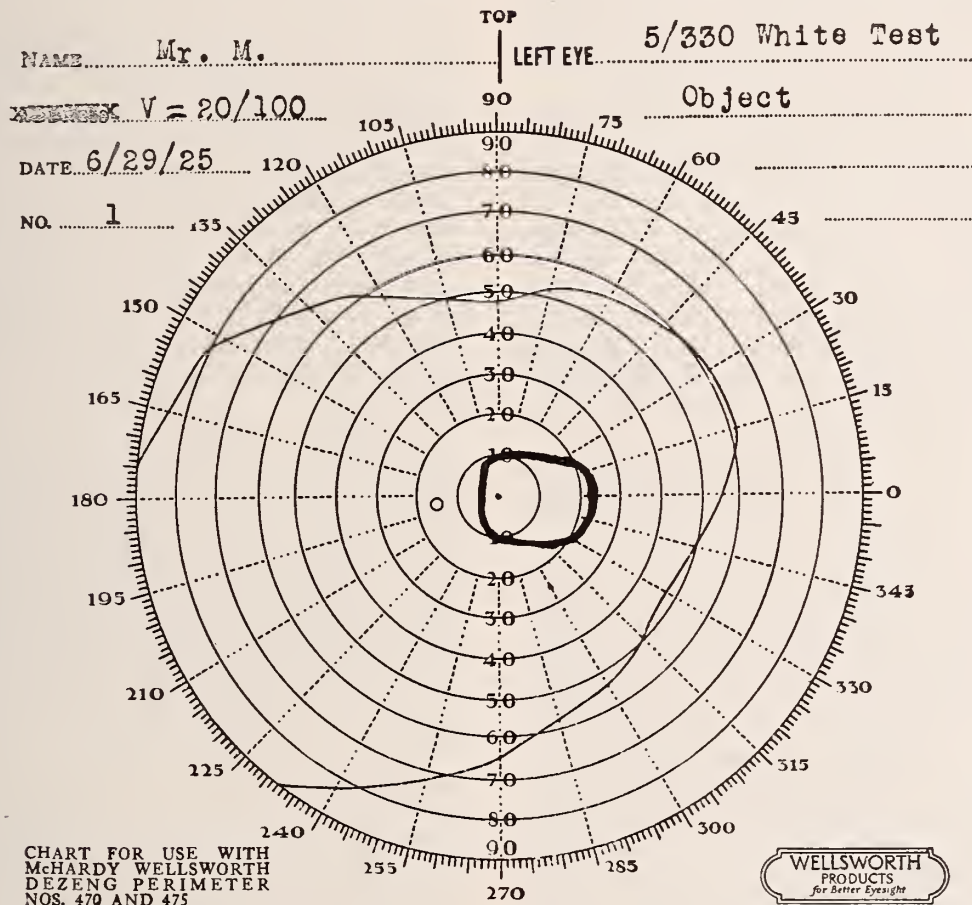
Physical Examination: Small of stature, prominent forehead and saddle back nose. Was hard of hearing. Blood pressure was 260-150. Heart enlarged with accentuated second aortic sound. Four plus Wassermann.

Progress Notes. February 10, whole upper part of cornea was opaque. Ground glass appearance.

February 21, more of cornea was opaque. Deep blood vessels coming from limbus above and nasally.

have found conditions which make the diagnosis of parenchymatous keratitis as certain a diagnosis as can be made.

Discussion: In Derby's and Carvill's series of 322 cases of parenchymatous keratitis reported in 1925, the oldest was a woman aged 46 years. DeSchweinitz says the affection is rarely after 30 years, and a few cases are on record as late as the 60th year of life. Fuchs says that it is only the exception that persons after 30



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Puncture Chart at Central Dot and place the opening over the pin at center of chart holder. Locate chart on holder to 90 will be up and the extended horizontal line will register with marks on clamp ring at either side.

The area of the Average Field of Normal Indirect Vision is shown by the space enclosed by the irregular continuous line. The blind spot is indicated by the small circle located about fifteen degrees to the left side of center.

February 28, almost whole cornea infiltrated, ground glass appearance, many blood vessels. The infiltration was yellowish gray and the iris could only be seen with difficulty. Blood pressure had come down to 200. About this time she had a stroke of apoplexy (basilar or interventricular hemorrhage) with left side of face paralyzed, also pharynx involved with inability to swallow, and some little involvement of hands and arms.

March 16, eye condition essentially the same. General condition very bad. Died of cardio-vascular a few hours after my visit.

In view of the findings, I think one is justified in claiming that in this case we

are attacked. This is the oldest case I could find on record, being 73 years old.

The disease is more frequent in females than in males. In this history only the mother and daughter were involved.

The majority of cases of interstitial keratitis are due to inherited syphilis, the evidence of which is present in at least 80 to 90 per cent of cases. In a small percentage of cases (2 to 10 per cent according to Stephenson's investigation) acquir-

ed syphilis is the etiologic factor. In this event the time between infection and the development of the corneal disease may vary from 4½ months (Lawford) to 20 years (Erson), but 36 per cent of the cases occur in the second year. And whereas in the congenital disease both eyes are always involved, the disease is frequently unilateral where the infection is acquired (R. Foster Moore). I believe in this case the disease was congenital on account of the past history of the patient and some of the stigmata of congenital syphilis, and also because her first eye was involved about the same time in life as her daughter's, namely in the middle twenties.

Parenchymatous keratitis attacks both eyes and more frequently in succession than both at once. Sometimes there is even an interval of several years between the involvement of the two eyes. In Derby's series in 80 per cent the eyes were attacked within a few weeks, but in one case there was an interval of 17 years. The interval between attacks in primary and secondary eye in this case was 47 years. This is the longest interval between attacks I could find in literature.

Case No. 2: June 29, 1925, Mr. M., age 34 years, white, married. Ocular diagnosis: Primary optic atrophy (tabes). Vision: Right eye, light perception. Left eye, 20-100. Field of vision, Diagram 1.

Past History: One and one-half years ago first noticed mist before right eye and vision gradually failed in this eye until in nine months the sight was gone. History of probable infection 12 years ago. Had treatment for several months 12 years ago. Had treatment quite intensively for one and one-half years. Shots in arm for eight months. Blood Wassermann always negative. Wife had one miscarriage soon after marriage. One adopted boy, but no children.

Recent History: Right eye blind for nine months. Left eye had been gradually failing for past month.

Neurologic: Patella and ankle reflexes negative. Romberg positive.

Eye Examination: Both pupils were irregular. No reaction to light. React to accommodation. Discs were very pale, grayish in color. Margins well defined. Central cup with lamina plainly visible. Vessels may be slightly contracted in right eye, also the minute vessels have disappeared. Vessels in left eye seemed normal. No other pathological changes in fundi.

Physical Examination: Physical condition good. Heart and lungs essentially negative. Abdomen negative. Blood Wassermann negative, spinal fluid 4 plus. Blood of wife 2 plus.

Treatment: Strychnine was given, gr. 1-60 tid., and was rapidly increased until he was taking 1-12 gr. tid. Swift-Ellis treatment (Salvarsan serum intraspinally) was given July 20. Also neo-salvarsan was given intravenously and bismuth intramuscularly. Discontinued treatment soon after left eye cleared up.

Progress Notes: July 27, considerable reaction from

Swift-Ellis treatment. Left eye, 20-60, vision better with field a little larger.

August 17, left eye 20-50. Field larger.

August 27, read Jaeger No. 1, with improvement of vision.

August 30, left eye, 20-20 with difficulty. Thinks he sees as well as he ever did from this eye. Field about normal compared with mine. Right eye hand movement at 1½ feet.

August 10, 1931, left eye failing for six months. Vision 20-30, field contracted to about 25 to 30 degrees. Advised Swift-Ellis treatment again. However, he was talking about going to Hot Springs, Arkansas, and we have not seen or heard from him since.

Discussion: There is no question at all that the Swift-Ellis treatment in this case caused such a happy result. He had the ordinary anti-luetic treatment with arsenic before with no avail to his eyes. The interesting feature about this eye is the almost immediate recovery of vision in left eye after starting this treatment and the retention of vision for six years. Perhaps with the same treatment, his more recent flare up might also have responded to treatment. However, if he had continued treatment in 1925, he might not have had a recurrence.

Pathology: DeSchweinitz states that in optic atrophy the nerve-fibres lose their medullary sheaths and are converted into fine fibrillae, between which are numerous fatty granular cells. Stargardt seems to have demonstrated that an exudative process in the chiasm and nerves precedes the degenerative one. Fuchs states that along with the degenerative changes inflammatory exudates occur and many hold that the inflammation may precede the degeneration so that the expression, simple or primary atrophy, is a misnomer (Stargardt, Spiller, Schoenberg, Webster). In this case there was an inflammatory process, otherwise his vision could not have responded to treatment so nicely, and further substantiates the works of the men just mentioned that inflammation may or does precede degeneration.

The average time from onset of symptoms to blindness is two to three years.

The treatment of syphilitic primary optic atrophy prior to the introduction of the arsphenamines was hopeless. Dr. Harry Friedenwald and others feel that some cases of optic atrophy of syphilis showed marked improvement after treatment with arsenicals. However, two modern methods of treatment, namely subdural therapy and fever therapy, have been found in various parts of the world

to be of some value in arresting the progress of the disease and in preserving useful vision.

In perusing the recent literature I find that J. E. Moore, an internist of John Hopkins, has written more about syphilitic optic atrophy than any other writer. I was impressed with the reports of successful treatment by different men all over the world by especially these two methods, subdural and fever therapy. Moore has a number of case records to illustrate the fact that optic atrophy might be arrested and useful vision preserved over periods of time ranging from four to nine years by the use of subdural treatment. He states that fever therapy (malaria) while also successful in a somewhat smaller proportion of cases is more likely suddenly to extinguish the patient's remaining vision; it is more dangerous to life, and patients treated with it have not yet been followed for long enough periods to insure permanency of the results. Moore concludes that in a patient with early primary optic atrophy sub-dural treatment by various routes (intraspinal or intracisternal) and with various substances (arsphenaminized serum, neoarsphenamine, mercury or air) combined with appropriate general anti-syphilitic treatment offered at least a 50 per cent chance of arrest or even slight improvement, and that by this means useful vision might be preserved for period of time long exceeding the average expectancy of two years from the onset of symptoms.

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THE PROGNOSIS OF SYPHILIS

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For hundreds of years the study of the prognosis of syphilis has afforded many thrills to those who have lent themselves to this task. Its alluring and speculative interest has only increased with the well-marked steps through the centuries, from the time of the Italian scholar, Fracastora

to the era of Ehrlick, Wassermann, Schaudin, and Nagouchi. To say that the subject is now nearing a solution would be a royal act of the imagination.

Because of the extensive and inaccurate propaganda regarding the seriousness of the infection of syphilis, the lay public in general has a superficial knowledge of its nature and results. This information is often misleading and affords impressions which do not properly measure its importance. When the patient who has acquired a syphilitic infection recovers from the first mental shock of the physician's diagnosis, his next reaction is to ask the possibility of cure, the duration of treatment and the chance of developing the many sequelae which he has been taught to associate with the disease. Will he ever be fit for matrimony and capable of begetting healthy children? How long is the disease contagious and will he be able to work while taking treatment? These, among other questions, confront all physicians who have to do with the treatment of syphilis. Not only do these patients understand how to shape their questions, but they have an accurate memory in regard to what is told them, however easily and frequently it may fail them in relation to other matters concerning their syphilis. The patients who have recently acquired syphilis are great questioners and their questions nearly all have to do with prognosis. The problems concerning prognosis the physician will be asked to solve and solve quickly, otherwise the disturbed and too easily suspicious patient will begin to distrust his sincerity. Confidence and absolute trust in the physician are outstanding essentials to thorough treatment—thus, to a favorable prognosis. The responsibility for a good prognosis in a given case of syphilis is definitely twofold: the doctor's part and the patient's part; and, in case of failure, the blame must be divided. Syphilis is one of the few diseases where the prognosis is definitely dependent upon the treatment properly carried out. There must be absolute cooperation between the doctor and the patient and there are many things concerning both which tend to alter this. How should we regard the moral side of the relation between the physician and the syphilitic patient? I fully agree with those who say that the doctor should never favor immoral relations; that it is his duty to prevent such, wherever he can. But I do not feel that the physician should con-

stitute himself a judge of his patient's morals. As soon as his patient has become infected with syphilis, even by his own indiscretion, and has been accepted for treatment by the doctor, he is entitled to the same sympathy and consideration as that accorded to a patient with a more patrician disease. An improper and critical attitude in this relation on the part of the physician has caused many a patient to discontinue his treatment and thus abort his own chance of recovery. Syphilitic patients who make themselves disgusting and repulsive by their moral depravity and shameless personality would hardly be attractive without their syphilis and no one could censor a physician who would refuse to treat them. On the other hand, to brand a syphilitic as an outcast, as an impious and wicked individual, is a moral error. If it were possible to deal out syphilis in direct proportion to immorality and excess, the question would be different; but, in fact, the greatest sufferers from this disease are a long way from being the greatest sinners. Their punishment many times is quite severe for the indiscretion committed. I am certain that no one would refuse his sympathy and kindness to those innocently infected with syphilis. Many of those who are responsible for their own misfortune are even as deserving of the physician's pity and compassion, or more so, since many times they have no one else to look to for a bit of condolence and consolation so richly bestowed upon those affected with other disease—disease which oftentimes, just as much as syphilis, is the consequence of reckless life and vice.

The accuracy of prognosis is greatly altered by the unfortunate circumstance that the majority of practitioners see only that phase of the disease which occurs in their particular field of work. Few have the opportunity to follow the patient from the initial lesion through the varied possible clinical manifestations. Their prognostic views then, are formulated by the phase of the disease which they see and the manner in which it responds to treatment. The visible accidents of the disease are treated until they disappear, but the infection as a whole is seldom treated or followed with the necessary and sustained effort. It is only by piecing together scattered observations by clinicians, pathologists, and serologists, that we can obtain our imperfect conception of the prevalence and possibilities of this great infection. An examination of the vital statistics, if prop-

erly compiled, gives accurate information as to the cause of death in all disease. It is not possible to obtain accurate information from the vital statistics in the venereal group. The truth just isn't written on death certificates. The relation of cause and effect due to the long duration of the disease is lost sight of on the one hand and the secret must be kept on the other. We have, therefore, at the present no correct estimate of the incidence of syphilis. Death from syphilis occurs in individuals 40 to 60 years of age as the result of myocardial, vascular, renal, and hepatic disease not clinically recognized as syphilis. In 4,880 autopsies recorded at Bellevue Hospital Symmers found syphilis in 314 cases or 6.5%. In a like study by Warthin at Ann Arbor during a ten year period, the infection was found present in 40% of the cases investigated. I cannot help but feel that it would be illogical, unwise, and unscientific to prognosticate the future of a syphilitic patient, seen at an early stage of the infection and treated by modern methods from the view point of the pathologist. Fortunately, all patients infected with syphilis do not die of the disease—thus, we are denied the absolute proof of cure insisted upon by the pathologist and are forced to rely upon the Wassermann reaction and other laboratory considerations interpreted and controlled by the clinician, the prolonged absence of clinical symptoms and the occurrence of second infections. To convince certain pathologists that syphilitics who come to autopsy with or without a positive Wassermann reaction were ever cured, would be a difficult undertaking. It would be just as difficult on the other hand to convince an experienced clinician that syphilis treated at the opportune time and in the right manner cannot be cured. Fortunately, the victim of syphilis is advised by the clinician and spared a life-time of misery and fear by his sane counsel. He is cured, marries, and has healthy progeny if he is fortunate enough to fall into the hands of a physician equipped with modern tools and the knowledge of how they should be used.

Much has been written concerning the effect of syphilis on the length of life. The individual who has had syphilis, even in the late stage, provided the lesions are in structures of little importance may outlive his allotted time. Whether or not this happens depends entirely upon the location of the active process. Since syphilis is primarily a disease of the blood vessels, and

results in the frequent occurrence of tabes and paresis, both of which materially shorten life, it produces a considerable lowering in the average length of life of the syphilitic as a class. Such definite figures as we have on this phase of the subject are obtained from the mortality tables of life insurance companies. The Association of Life Insurance Medical Directors and the Actuarial Society of America compiled and published a Medico-Actuarial Mortality Investigation of impaired insurance risks. From this we get our most valuable statistics on the subject that exist, because, covering as it does the immense number of cases and the experience of nearly all of the American companies, the number of cases known or suspected to be syphilitic reaches the enormous number of 25,500 persons of all ages. Among these 25,500 cases there have been 328 actual deaths while the expected was 192.82. That is, among these cases, there was an excess mortality, of nearly 70%. The normal mortality rate for the American companies is based upon millions of risks, among whom it is true there are many unsuspected syphilitics; but, in the aggregate, we may consider it an accurate basis of comparison for determining the extra mortality rate among known syphilitic risks. Thus we have an index to the reduced life expectancy caused by the disease. A further study of these statistics indicate that the increased mortality of syphilitics is large between the ages of 30 and 45, and is greatest between the ages of 45 and 60. The reason for this is evident as it is the period in life of nervous and cardio-vascular disease, the structures of seeming predilection of tertiary syphilis.

When we consider the effect of treatment on the prognosis of syphilis, we find that it is one of the few diseases in which the artificial factor of specific medication may be claimed to exert a greater influence on the course of the disease than that exerted by the natural body resistance. Then, we may consider the effect of treatment on the prognosis of syphilis from the standpoint of the three great periods in the course of the infection: primary, secondary, and tertiary. It has long been accepted that the earlier treatment is begun, after the diagnosis is established, the better is the prognosis. Then, we cannot too strongly urge the use of the dark field examination to demonstrate the spirochetes as a means of diagnosis as soon as the chancre appears. We can well agree with

one modern teacher who frankly states that if the medical students were taught the proper use of the microscope, the local, and blood Wassermann reactions they would be much safer servants of the public than with their present equipment of half-truths about induration, erosion, multiplicity, painlessness, etc. The physiognomy of the chancre shall always be of interest as to the technique of exact inspection and logical diagnostic deduction; but, as a basis for real diagnosis, it belongs to the era of pre-spirochetal syphilis. It is now a laboratory consideration. With this early diagnosis, then, we are afforded our great chance. After the appearance of the chancre there is a period of a week or ten days which we may call the golden opportunity in the treatment of syphilis,—the period in which the Wassermann reaction is negative and the disease has not become too generally diffused. Theoretic consideration suggests this to be the time when we have the best prospects of absolutely destroying the infection, and practical experience teaches this to be a correct supposition. With correct and heavy treatment the disease in this period can be quickly and radically cured. We must not depend upon this, however, and this early diagnosis should save the patient nothing except perhaps his future health. The question of abortive cure here comes up and affects the general prognosis of syphilis in no small way. There is little doubt that the results of abortive treatment have placed it in the mind of the true clinician as an obsolete conception. If the syphilis could be weighed on the scales and so much syphilis call for so much arsenic the question would be simple. Since syphilis is the true example of relapsing disease this practice may be considered dangerous, and tending towards prognosis unfavorable to the best welfare of the patient. There are many things closely associated with the treatment that very much affect the prognosis of early syphilis. Among these, as has already been mentioned, the doctor must understand the patient himself with all his desires, aversions, and peculiarities. He must also learn something of the ability of his patient to live with his syphilis, how he can tolerate treatment, and something concerning his ability to carry out treatment as planned for him. Since the prognosis is so closely affected by the type and amount of treatment in early syphilis this should be pushed to the tolerance of the individual if

lasting and thorough results are to be expected. In all syphilis the element of natural resistance of the patient and his ability to produce immunity is very important when we come to consider the ultimate outcome of his infection. Some immunity can be made and it behooves the clinician to give his patient the benefit of this. In a discussion of this subject last year, I called attention to the Herxheimer reaction as an aid to treatment. We have been taught, since the advent of specific medication in syphilis, to avoid all semblance of what has been called therapeutic shock—the Herxheimer reaction. I have reported a series of cases of early syphilis in which this reaction was produced purposely and found to be of great benefit to the final outcome of the cases. It is definitely known that dead bacteria in the system liberate endo-toxins or antigens which in turn stimulate the production of antibodies. Then, in the early case of syphilis when the patient is literally swarming with spirochetes, if he is given a dose of salvarsan large enough to produce a Herxheimer reaction—to kill enough of his spirochetes to give a sharp bodily reaction, he can be made to vaccinate himself, so to speak, against his own disease. He will have the same type of reaction—with a mild chill and temperature—that is seen when a patient is given a large dose of dead typhoid bacteria as in typhoid vaccination. I find that the patients who have this reaction in the treatment of their early syphilis require less treatment and become negative sooner and stay negative longer than those cases in which this reaction was carefully avoided as formerly taught. With equal surety the Herxheimer reaction should be avoided in late syphilis because here the basic pathology is entirely different and the activation of it when localized may produce dangerous complications. Then, in early syphilis the treatment should be vigorous and free from rest for at least the first year for in this period the cure is made.

A general consideration of the prognosis of late syphilis is a much more discouraging study. Here we enter the case when the destruction has already been started or accomplished and our prognosis depends upon its location and extent. A safe rule here is to go slow and observe much. In this stage we must forget the syphilis and treat the individual. Much has been written about the "normal syphilitic" and it is a common experience for the clinician to

see a patient who is getting along nicely with old syphilis until his treatment is started. The cure at best is dubious, and, to get a negative Wassermann reaction, is only misleading; it is no evidence in old syphilis. In late syphilis we must rely on drugs of less spirocheticidal value: mercury, potassium iodide, and arsenic late in the course of treatment, if ever. Since syphilis has a predilection for the cardiovascular system it may be said that here is where it reaps its toll and the study of this phase of syphilis constitutes the most interesting chapter in the whole field of syphilology. In the aorta, the changes come in the media and when of sufficient magnitude announce themselves by a soft diastolic murmur with varied pains. Many lesions of syphilis heal with the greatest kindness but here the story is discouraging and the average span of life after symptoms are noted is about four years. Our hope is to prevent rather than treat. In the face of a negative Wassermann with a suspicious history and symptoms it is bad practice to employ arsenic as a therapeutic test. This procedure should be discouraged as dangerous, as great damage can be done to a syphilitic heart with arsenic.

As we come to consider the central nervous system involvement in relation to prognosis, we find another chapter in syphilis which is discouraging. It has been said by many an accurate observer that any man who develops an Argyll-Robertson pupil is in serious trouble. He is riding for a fall; tabes, paresis, or cerebrospinal involvement may be his lot. The most frequent is a meningitis involving the middle fossa, and this and all syphilis that is localized in the central nervous system give us our best prognosis. In all cases where the pathology is disseminated the prognosis is bad. Here, as in all syphilis, the greatest aid to a favorable outcome is an early diagnosis and the instituting of proper treatment. The Wassermann reaction in the spinal fluid is of great value in predicting the outcome of an involvement in the central nervous system. There is nothing more horrible than a true picture of paresis, and when this stage is reached, the prognosis at best is very unfavorable. Intabes, the expectancy from treatment is different. Eighty-five per cent of the cases of central nervous-system-syphilis, and especially tabes, have some sign in the pupil five years before symptoms are noted. The loss of the

light reflex is most constant. Pain precedes the loss of the tendon reflexes and there is much hope before this process of destruction is complete. In both tabes and paresis, we can promise improvement in the symptoms and general condition of the patient and many of these patients return to their occupations. We may not make them but 40-60% efficient but this is better than allowing them to be 100% dependent and require two other people to care for them.

The effect of other disease upon the course of syphilis has demanded attention and is of considerable interest. The individual who has other disease has truly a double burden when he contracts syphilis. It is possible that this may render his syphilis worse but in my limited experience I have not found it so and the ability of the patient with chronic disease to withstand syphilitic infection is surprisingly good. On the other hand the syphilis seems to exert an unfavorable influence upon the existing disease. The engrafting of syphilis upon pulmonary tuberculosis is theoretically a bad combination, but practically, it does not seem to be the case. On the other hand, diseases of the viscera and nervous system are not nearly so compatible with syphilis as it is a seeming habit of syphilis to settle on already damaged structures in this area.

The ideal patient to resist syphilis is the individual of sound body and good physical inheritance who lives a rational life. Natural resistance to syphilis without question is variable among apparently normal men, but, as a rule, the patients in whom we usually see the most serious forms of late syphilis, with the exceptions of tabes and paresis, are our dissipated vagabonds. The next worse is the man about town without domestic obligations or the sense of responsibility for them, and who has not the intelligence or will to follow instructions, or to accept the slight inconvenience of proper treatment. When he reaches middle life his syphilis collects its toll and produces its destruction in the nervous system, in the arteries, the liver, or some other vital structure. The great Osler put syphilis down as first among all the medical causes of death and it has lately been termed "the pale horror." At best, then, the destiny of the syphilitic is studied with anxiety and is held in the laps of the gods. The field is fertile and still awaits the attention of a brighter investigating mind.

CLINICAL ALLERGY—SOME FACTORS GOVERNING DIAGNOSTIC AND THERAPEUTIC PROCEDURES

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While the advent of allergy as a specialty in medicine has been relatively recent, many of the phenomena concerning it were known for years. As in many other instances, general interest in this subject has been accentuated by a term which has caught popular fancy. While the frequency of allergy is very generally recognized today, this is not true of many of the principles that govern diagnostic and therapeutic procedures. Therefore, some of the more important of these principles shall be considered at this time, since their understanding by the general practitioner is just as essential to the successful practice of allergy, as is detailed knowledge of the subject by the specialist.

I. TERMINOLOGY

The term "allergy," originally used by Von Pirquet¹, designated altered reactivity, i.e., a second application of the same substance, or one closely related, was toxic, whereas initial contact was innoxious.

Today, however, the term is used loosely by clinicians² to designate all forms of hypersensitiveness except anaphylaxis in experimental animals, and is a word without scientific meaning. Hypersensitiveness³ is a term which includes all forms of specific sensitization, therefore the nomenclature of the allergic diseases may be arranged as follows:

I. HYPERSENSITIVENESS

1. Anaphylaxis—sensitivity in experimental animals.
2. Allergy—sensitivity in man.
 - a. Atopy.
 - b. Hypersensitiveness of infection.
 - c. Contact sensitization.
 - d. Drug and serum sickness.

There are definite immunologic and clinical features that characterize each form of allergy, the knowledge of which is a prerequisite to correct clinical procedure. Coca⁴ has emphasized this in the statement: "Specific sensitiveness is an immunologic disease to the understanding of which two keys are necessary. The first

is the idea of *specific mechanism*, and the second is the idea of the *shock organ* (Doerr). The conception of "*mechanism*" of reaction is extremely important for it is upon this basis that allergy is differentiated from other disease, and the various types are defined.

The idea of mechanism can be illustrated in the case of three sisters who ate chocolate candy. The one ate an excessive amount, while the other two took average portions. The following day all three had abdominal pain followed by diarrhea with mucus. On continued study it was found that one had symptoms because of a *carbohydrate intolerance*, that is, she could not digest normal amounts of carbohydrates; the second had distress when she over ate because *undigested carbohydrates* passed down into the lower bowel, where fermentation occurred, while the third sister was *allergic* to chocolate. The difference between these three reactions to the same food, all identical in so far as clinical features are concerned, is in the *mechanism* by which symptoms were produced.

II. FORMS OF ALLERGY

(A.) Atopy:

Atopy includes those allergic diseases subject to a hereditary influence. The incidence, the age of onset, the site of reaction and the clinical forms all being influenced by this factor.

Testing is done by the scratch and intradermal method and gives specific skin reactions in about 50% of the cases, and is the only means of determining by skin testing, the specific factors in the atopic diseases. Since passive transfer can be made, testing may be carried out in a second individual when desired.

Clinical atopy includes two diseases in their entirety, that is hay fever and bronchial asthma and some forms of headache, dermatitis, mucus colitis, gastro-intestinal disorders, bladder irritation, Meniere's syndrome, epilepsy, urticaria, etc.

The diagnosis of specific sensitization in those diseases where atopy is only occasionally a factor, should not be made, unless, one has been able to reproduce the original symptoms with one or more specific products. These diseases will be briefly reviewed at this time.

1. *Headaches*: Atopic sensitization is responsible for three types of headache: (a.) Those secondary to allergic reactions

in the nose and sinuses. These may be due to either foods or inhalants; (b.) the headache of general allergic reaction which usually follows an overdose of a pollen extract, or is secondary to contact with an unsuspected allergen, and (c.) migrainous like headaches.

The probability of migraine being an atopic manifestation originally suggested by Vaughan³ in 1927, is still an unsolved problem. Clinical migraine is a symptom, not a disease, and there are many precipitating causes other than allergy. Thus far, no one has offered proof that the true migrainous individual has an atopic hypersensitive status or that the mechanism of symptom production is identical to the known atopic diseases. There has been a great deal of confusion between migraine and headache due to allergy because in both instances, they are familial in nature, recurrent, paroxysmal and exhibit many symptomatic features in common. It has been shown⁴ that the symptoms manifested in various attacks are not of diagnostic aid but that the recurrence of the headache is of some prognostic value. Patients with headache only at the menses, those with periodic attacks, that is 14 to 20 days, and those with ophthalmoplegic symptoms have not been relieved, to my knowledge, by allergenic management.

The headache patient most apt to benefit by allergic study is the one with frequent irregular attacks, in whom there are other atopic manifestations and whose family tree exhibits atopic diseases as well as recurrent headache.

2. *Gastro-intestinal Diseases*: Atopic sensitization can account for almost any type of symptom in the enteric tract and often simulates various syndromes such as chronic appendix, cholecystitis, etc. The mimicry of other lesions is quite superficial, according to Duke⁷, and should present no diagnostic difficulties. In considering allergy as a factor in gastro-intestinal disorders it is important to remember that, (a.) it is only one of many possible causes of the same kind of symptoms; (b.) it is so protean in expression that it must be considered in the differential diagnosis of all forms of enteric disease, and (c.) that if one will consider its probability he will seldom fail to make the diagnosis.

3. *Skin Manifestations*: Infantile eczema, eczema in an adult who suffered with the disease in infancy and urticaria may

be due to atopic sensitization. Scratch and intradermal tests are to be employed in skin testing these individuals. Patch tests if positive are irrelevant to the atopic manifestations, although one should bear in mind that both atopic and contact sensitivity may exist in the same individual and produce skin lesions at the same time. Very often abrasions present in the eczematous skin admit products which cause local reactions and thus give a false impression of contact sensitization.

Urticaria is one of several primary reactions of the skin to irritation, and like migraine, it is a symptom and not a disease as is so often intimated. Urticaria is due to allergy in less than a third of the cases in general, being a factor most often in those cases with other allergy and a family history of such diseases.

In the group of diseases in which atopy is sometimes, but not always a factor, one can aid the diagnostic problem by three studies. The first, is the analysis of the family tree for other types of atopy. The second, is a review of the symptoms of childhood, there frequently being different allergies then than in later years. The third, is the elicitation of signs indicative of sensitization, that is, frequent atypical colds, sneezing, rhinorrhea, nasal blocking and itching of the nose, eyes, ears, roof of the mouth, back of the throat and sometimes between the shoulder blades. It must be remembered however, that these are only presumptive, not direct aids to the diagnosis.

(B.) *Hypersensitiveness of Infection:*

There are two diseases, tuberculosis and ringworm in which this allergy has been studied in detail. The latter is illustrated clinically by the trichophytid eruption on the hands secondary to the trichophyton infection of the feet. Very often this eruption is considered as eczema, an error that can be avoided if examination of the feet is a routine procedure in these patients. Testing can be done by all three methods, scratch, intradermal and patch, but their interpretation is difficult and beyond the scope of this paper. Food sensitization may aggravate this lesion and the elimination of offending foods may account for considerable improvement⁸, but this does not mean that food allergy is a primary factor.

(C.) *Contact Sensitization:*

This form of allergy is not influenced

by heredity, 70% of the white race being susceptible⁹. Sensitization occurs in the skin, gastro-intestinal and bronchial mucosa.

Testing should be done by the contact or patch method since it is the only one that will give specific reactions. Many of the delayed scratch tests are actually due to contact sensitization.

Clinically, this allergy is responsible chiefly for dermatologic manifestations, but there is some evidence to indicate that it may account for lesions in the gastro-intestinal tract¹⁰ and the bronchial mucosa¹¹. The cutaneous eruptions include occupational dermatitis, dermatitis venata, dermatitis medicamentosa and drug reactions of the exanthematous type such as arsphenamine or mercury dermatitis.

Since the term "allergy" is a common denominator for all forms of sensitization in man, one should not use the term to describe features of hypersensitiveness unless they are common to the group. Thus, it is erroneous to say, "allergy is inherited," for this is true of only one form, atopy. In the same vein, the terms "allergic migraine," "allergic eczema," "allergic dermatitis," or "allergic headaches," etc., are incorrect. A clinical designation should not use descriptive adjectives that include etiologic speculation. If there are certain clinical features that distinguish one headache or one dermatitis as being allergic, apart from the others, this would be permissible but such is not the case.

III. THE LIMITATIONS, USE AND ABUSE OF SKIN TESTING

The diagnosis of the specific exciting causes of the allergic diseases is accomplished by three methods; the history, skin testing and clinical observation. These three diagnostic procedures are interdependent and necessary studies in the establishment of the etiologic factors in any case.

Because of the general interest in testing and its frequent use as a diagnostic measure, it seems well worth while to consider some of its limitations, its use and abuse.

(A.) *The Limitations of Skin Tests:*

This procedure as a diagnostic measure has some very definite limitations which may be summed up as:

1. It is not possible to determine the

presence or degree of clinical sensitization by skin tests.

2. The specificity of the various reactors cannot be determined by this method.

3. They are not a means of diagnosing whether or not a patient is an allergic individual.

4. The reactions are quite variable, not only in different areas, but in the same location on repeated trials.

5. It is impossible to test a patient and prove any sensitizations unless symptoms are induced and these may vary from those resulting from normal contact.

These statements are ably supported by reports in the literature¹² and their practical value is this: The cutaneous reactions of an allergic individual is one form of sensitization and it may not be related to any other allergic phenomenon. In other words, the patient may be skin sensitive but not to the actual cause of his trouble. He may have cutaneous reactions to all the products responsible for his symptoms, but even then the specificity of each reactor is left in doubt and must be determined clinically. He may be exceedingly sensitive to one or more products with consistently negative skin tests. Finally in the case of dermatologic manifestations one must first determine the form of sensitivity responsible for the lesion before he can properly evaluate the skin tests, for there may be scratch and intra-dermal reactions in patients whose disease is due entirely to contact or vice-versa.

(B.) The Abuse of Skin Tests:

The abuse of skin testing may be summarized as:

1. The attempt to evaluate the probability of allergy in a patient by this means.

2. When patients are considered specifically sensitive to those products that cause cutaneous reactions.

3. The inclusion of positive skin tests in case reports as though they were actual clinical sensitizations.

4. When repeated testing is considered a means of making the specific diagnosis.

(C.) The Use of Testing:

In view of the statements just made, which are supported by ample evidence in the literature, one might inquire as to why skin testing should be done at all.

Skin reactions, properly interpreted,

provide one with a point of departure¹³ in the therapeutic regime. They are not over 50% accurate in all allergies¹³, but in seasonal hay fever they are specific in approximately 85% of the cases. If one will interpret reactions in light of the history their diagnostic value is definitely increased, but clinical testing alone establishes the etiologic factors in any case of allergy.

Because some allergists have organized commercial laboratories through which they propose to diagnose cases by mail, it should not be assumed that the determination of the specific causes of allergy is a simple procedure, for it is one of the most difficult in medicine. Both physicians and patients should know that testing is only an initial procedure, of itself of little or no value, and that it may be a matter of weeks or months of clinical observation and study before a single exciting factor is discovered.

IV. THE IMPORTANCE OF SECONDARY SENSITIZATIONS IN SEASONAL HAY FEVER CASES

Vasomotor rhinitis (hay fever) of either the perennial or seasonal type is a local manifestation of a constitutional disease, and this fact should be considered in diagnostic and therapeutic procedures for these patients.

The etiologic factors in seasonal hay fever may be either primary, that is symptoms occur with each contact, or secondary, that is symptoms are not induced unless other agents have first irritated the nasal mucous membrane.

The evaluation of the etiologic factors in hay fever of the seasonal type is not as simple a process as it might appear. This statement is supported by the fact that only 7-46% of the patients obtain complete relief of their symptoms based on ordinary diagnostic procedures¹⁴. One must bear in mind that hay fever of a seasonal onset or type, may be due to other agents than pollen. It may be due to feathers¹⁵, orris root¹⁶ or to foods¹⁵. Last year I saw a patient who had previously been diagnosed as a pollen sensitive individual because the symptoms began on the first day of the pig weed season. When her symptoms were studied with the idea of determining not only the type, but their cause, food was incriminated and on eliminative

treatment she made very definite and satisfactory improvement.

HISTORY TAKING IN HAY FEVER

While the sudden onset, the period of occurrence and the characteristic symptoms, easily identifies the disease entity of hay fever and suggests the causative pollen groups, these features have no diagnostic value in the case of secondary sensitizations. For this purpose a study must be made of the relation of symptoms to meals, occupation, dusts and meteorological changes. A correctly taken history will indicate whether or not any of these etiologic groups just mentioned, play a part in the production of symptoms.

SECONDARY SENSITIZATIONS

I. Pollen:

It is quite rare to find patients with hay fever from August fifteenth until frost, skin sensitive to only the rag-weed pollen. In some instances their reactions to the other pollen groups are as definite as are those of the rag-weed. In such cases the choice of products to be used in treatment is somewhat difficult, but if the patient is absolutely free of symptoms until August 15th, one probably should not interpret all the skin reactions as etiologic. If, however, the patient has mild symptoms during the latter part of July, or during the entire summer, and marked ones after August 15th, the second and sometimes the third pollen groups should be used. The indiscriminate use of two or three pollen extracts on the basis of skin reactions only, is to be condemned, not only on account of the expense, but as being unscientific therapy.

II. Food:

Patients with food allergy, not skin reactions to food, will have an increase of symptoms in direct relation to the ingestion of such foods. The interval between eating and the appearance of nasal signs may vary from a few minutes to several hours and in some cases may be more or less continuous.

III. Dust:

Orris root is a factor in many cases and is evidenced by an increase of symptoms in crowds or when in beauty parlors, barber shops, etc.

House dust sensitization is manifested by an increase of nasal irritation when the patient is in certain rooms or near some

article of furniture, or when dusting or sweeping is going on.

Pyrethrum is made from a composite plant and it is often responsible for symptoms in those sensitive to the rag-weeds. It is used as an insecticide, either in liquid or powder form.

IV. Animal Danders:

Although skin reactions are frequent, relatively few patients are sensitive to animal danders, and when so, symptoms are increased over night, (feathers) or on contact with the animal in question. Rare animal contact through overstuffed furniture, rugs, or clothing is not as infrequent as might be assumed.

V. Causes for Failure in the Treatment of Seasonal Hay Fever:

The discrepancy between the theoretical and actual results of specific therapy in seasonal hay fever patients is a subject of much importance, since failure is not that of a therapeutic principle but of its application.

FACTORS CONCERNED IN THERAPEUTIC FAILURE OF HAY FEVER

I. The Avoidable Errors (Personal Factor):

1. Incorrect diagnosis:
 - a. Errors in the differential diagnosis:
 1. Condition not allergic, i.e., infection, etc.
 2. Allergic case complicated by:
 - a. Infection.
 - b. Mechanical conditions, spurs, septum deviation, etc.
 - c. New growths; polypi, etc.
2. Therapeutic failure due to various factors as:
 - a. Improper dose:
 1. Overdose.
 2. Insufficient dose of potent material.
 3. Pollen extracts not potent.
 - b. Treatment schedule inadequate; being based upon empirical rules, instead of upon a clinical knowledge of atopy.
3. Failure to evaluate secondary sensitizations in treatment:
 - a. Pollen, other than the primary ones.

- b. Foods.
- c. Dusts.
- d. Animal danders.
- e. Incidental proteins.

II. Unavoidable Causes of Failure:

1. Inability to build a tolerance in the patient¹⁴.
2. Contact with massive amounts of pollen.

It is seen that avoidable errors account in the most part for failure in the treatment of hay fever, and of these, secondary sensitizations are probably the most important. Since testing with inhalants is more satisfactory than with foods, we would expect that the latter are the most difficult to diagnose.

Some foods cause hay fever symptoms only during the pollen season, while others induce symptoms with each ingestion, but because of their periodic use, for example watermelon, have seasonal characteristics. Again food sensitizations may interfere with specific therapy. Eyermann has shown me a patient sensitive to wheat in whom adequate dosage of rag-weed pollen extract could not be given until it was eliminated.

Food sensitization is at the same time the most neglected and over estimated factor in patients with seasonal hay fever; it is neglected because sufficient effort is not made to determine the cases in which it is a factor; it is over estimated because routine food tests when positive, are so often considered significant without regard to clinical facts.

Of the unavoidable causes of failure in hay fever therapy there is one, contact with massive doses that might well be discussed. Physicians should govern their estimation of relief from pollen therapy on the basis of the pollen count in their community. Fortunately, a very satisfactory pollen survey has been completed and these figures are quite reliable since all slides have been studied under identical conditions, thus eliminating the personal error.

COMPARATIVE POLLEN COUNTS FOR THE YEARS 1929, 1930, 1931 and 1932¹⁷

1929*	1930*
Kansas City12,806	Indianapolis 7,115
Omaha12,085	Houston 5,278
Indianapolis11,439	Kansas City 4,055
Wichita10,123	Wichita 3,979
Oklahoma City 6,305	Buffalo 3,948
Moorhead 6,267	Louisville 3,934
St. Louis 5,686	Omaha 3,790
Dallas 4,634	Moorhead 3,501

1931*	1932*
Buffalo14,675	Indianapolis14,409
Louisville11,355	Buffalo12,386
Indianapolis 9,998	Omaha11,207
Milwaukee 7,458	Kansas City 9,187
Omaha 5,936	St. Louis 8,619
Pittsburgh 5,734	Dallas 8,176
St. Louis 5,573	Minneapolis 6,984
Kansas City 5,492	Louisville 5,438

*The eight highest total counts of the season.

It can be seen that patients living in Oklahoma City can expect better results than those in Wichita, Kansas City, Indianapolis or even Omaha. This is accounted for by the fact that short rag-weed increases as we go east, which is more responsible for the high pollen count than in giant rag-weed.

SUMMARY

1. Hypersensitiveness in man is commonly designated as "allergy." There are four forms, differentiated on the basis of "mechanism" of reaction.

2. The diagnosis of the specific exciting causes of allergy is based upon three interdependent studies, skin testing, the history and clinical observation.

3. Skin testing is not a means of specific diagnosis since it is only 50% accurate. It provides one with a point of departure in treatment if correctly interpreted.

4. Seasonal hay fever is a local manifestation of a constitutional disease and should be considered as such from the standpoint of diagnosis and treatment. Uncomplicated cases of this disease are rare, judged by reports of complete relief.

5. History taking in seasonal hay fever should concern itself not only with the recognition of the disease entity, but also with an evaluation of the exciting causes, more especially the secondary sensitizations.

6. Causes of failure in the treatment of seasonal hay fever are for the most part avoidable errors.

7. The prognosis of specific therapy in hay fever varies with the pollen count of each community.

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DISCUSSION: *Dr. Fannie Lou Britton*, Oklahoma City.

I have certainly enjoyed Dr. Rinkel's paper. It has been a complete and timely paper. It is indeed one that we really need. If anyone here is doing allergy, they know that we do pay too much attention to the testing. I had a patient who tested out sensitive to thirty things. She was sensitive to wheat, eggs, milk, meat, cauliflower and irish potatoes, but more sensitive to wheat and milk than eggs. She showed a marked reaction from cauliflower or anything with eggs in it.

I agree with Dr. Rinkel that our poorest results are with patients who have headaches at the menstrual period. These cases have been my poorest results.

It is very important to follow these allergic cases through. Too often we do not follow up our cases, and they are the ones who count for much of our poor results.

I don't believe I can say more, because Dr. Rinkel has given you such a complete paper.

Dr. E. E. Baum, Tulsa.

I want to congratulate Dr. Rinkel in that

he was able to come out in the open and clear this allergic situation up. This has been a complicated thing, and we have not been able to find out what all this is about. I believe this has been the most instructive talk that I have ever heard in the field of allergy.

Closing Discussion: *Dr. Rinkel*.

What I had to say here was entirely because that is the way I have found it.

I think that it has been a courteous thing of the men here to ask me to come and read this paper. I thank you.

CANCER-LIKE LESIONS OF THE UTERINE CERVIX

Richard W. TeLinde, Baltimore (*Journal A. M. A.*, Oct. 14, 1933), states that he has observed several uteri which have been removed unnecessarily because of an uncertain histologic diagnosis of a lesion of the uterine cervix diagnosed erroneously as "precancerous." For a lesion to be considered "precancerous" it must be established that the incidence of carcinoma developing in such cases is greater than that of carcinoma in persons free from such a lesion. As an example of a lesion now definitely recognized as precancerous one might cite leukoplakia of the vulva. A review of the literature reveals many reports of cancer-like lesions of the cervix. As has been repeatedly emphasized by Meyer, the question of whether a lesion is malignant or benign can be determined only by the patient's subsequent clinical course. The author presents a series of twenty-four such cases followed clinically and feels that the results are of value in determining whether or not any of these cancer-like lesions subsequently developed into actual cancer and whether the term precancerous may properly be applied to them. The material on which his study is based is derived from histologic lesions encountered in the routine examination of cervical tissue coming to the laboratory. The microscopically suspicious lesions were found in twelve instances in cervical polyps which were simply twisted off, no attempt being made to remove the tissue radically about the base of the polyp. The lesions were accidentally found in tissue removed at trachelorrhaphy in three and at amputation of the cervix in one case. In one instance the tissue was removed for biopsy of a suspicious cervical lesion and in one instance by curettage. In six cases the routine examination of cervixes removed by panhysterectomy showed cancer-like lesions. From all such cases several blocks were cut and several sections studied from each block in an attempt to find unmistakable cancer in the same cervix, with the idea, particularly, of tracing continuity between the cancer-like lesions and true cancer. In none of the instances was definite microscopic cancer encountered. In this way the author has attempted not only to check up his histologic diagnosis but also to learn the true significance of questionable cervical lesions. There was no evidence that any of these patients subsequently developed carcinoma of the cervix.

CASE REPORTS ILLUSTRATING SEVEN MANIFESTATIONS OF ALLERGY IN CHILDREN*

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OKLAHOMA CITY

I wish to present this morning seven children representing the following seven manifestations of allergy:

- (1.) Seasonal hay fever
- (2.) Bronchial asthma
- (3.) Urticaria
- (4.) Migraine
- (5.) Eczema
- (6.) Colitis
- (7.) Epilepsy

The first four symptom complexes mentioned are frequently seen by the pediatrician and the general practitioner and are probably always due to a specific sensitization. The fifth and sixth conditions mentioned are likewise frequently seen by the pediatrician and not uncommonly have allergy as the exciting factor. The seventh case is being demonstrated with an idea of showing that at least some cases of epilepsy are due to specific sensitization.

SEASONAL HAY FEVER

In the Great Southwest seasonal hay fever in infants and children is by no means rare. Some of the pediatricians in the East remark in their writings on allergic diseases that seasonal hay fever is rarely ever seen under five years of age and is not common in children. Their statements concerning the children in the East and North are probably true, but they would not hold in the territory in which we live. In our territory the pollen content of the air is from 40 to 300 times greater than that of the East and North. The following case is presented to illustrate a common type of seasonal hay fever seen in children.

Case 1. Betty Sue N., 2½ years old, was brought to the Clinic on account of an eczema which had existed since 3 months of age. The following family history was elicited:

One uncle with hay fever; two cousins with hay fever; paternal grandmother with hay fever; maternal aunt had eczema.

Skin tests revealed the following:

Wheat	***
Eggs	**
Milk	o
String bean	**

White potatoes	**
Peas	**
Asparagus	**
Onion	*
Plum	**
Banana	**
Silk	****
Pollens negative.	
Animal dander negative.	

The foods to which this patient was sensitive, except small amounts of wheat, were removed from her diet, with about 80 per cent freedom from symptoms. Wheat was entirely taken out of the diet, with complete freedom.

We did not see this patient for a number of months. On the 29th of August, she was brought to us with typical symptoms of seasonal hay fever of seven days duration. On testing her with pollen we found the following:

Giant ragweed	***
Short ragweed	****
Western ragweed	****

Discussion: Here is a patient with an ancestral history of allergy, who manifested a sensitivity to food by an eczema rash at 3 months of age, who had the ability to become sensitive to animal dander and pollen, and showed evidence of the sensitivity to pollen nine months later. Hay fever under five years of age is by no means rare in the Southland and the Great Southwest.

BRONCHIAL ASTHMA

The following case illustrates the importance of food as an etiologic factor in many children who suffer from asthma.

Case 2. Betty Jo M., 6 years of age, was brought to us when she was five months old with a history of severe asthma since three months of age. A nurse brought the child, as the mother was sick, and reported to us that she was on the mother's breast for a while, but had a great deal of colic; was changed to cow's milk at 3 months of age and one week later began to have very severe attacks of asthma. At the time we saw her she was on modified cow's milk.

In testing we found the following:

Whole wheat	****
Wheat leucosin	****
Wheat globulin	****
Wheat proteose	****
Wheat glutenin	****
Wheat gliadin	****
All other foods negative.	
Animal dander negative.	
Pollen negative.	

The question naturally arose as to where the child was obtaining wheat. The nurse told us that a special cow was being kept, fed on bran, and I suggested that in all probability the wheat was coming down through the cow's milk. This child was placed on cow's milk coming from a composite milk supply from cow's fed on green wheat pasture, with freedom from symptoms.

We have seen this child off and on since that time, which covers a period of four years. She has had a number of attacks of asthma each year, and each

*Clinics presented before the General Assembly, at the Fall Conference of the Oklahoma City Clinical Society, November 7, 1930.

time the attacks have been traced to pieces of bread or wheat products of some sort that she has eaten.

At 3 years of age we found her sensitive to eggs and also to feathers. Eggs have been kept out of her diet and she has been kept off of feather pillows. This child is so sensitive to wheat that the father reports that a piece of bread the size of a grain of wheat would cause her tongue to swell and would produce an attack of asthma.

The father of this child is an asthmatic patient of ours.

Discussion: This child represents a case of asthma coming on early in life, due to wheat. Later she became sensitive to other foods and to animal dander. Born with this ability there is no reason why she should not become sensitive to pollen later and have hay fever, or have her asthma complicated with a pollen sensitivity. She represents a case of being so sensitive to food that a very small amount of wheat will produce asthmatic symptoms. Asthma in children is very common, and food is usually one of the factors in patients who develop symptoms before ten years of age, therefore such patients must be carefully studied from the standpoint of a food sensitivity.

URTICARIA

Urticaria in children is frequently associated with other allergic conditions, as the following patient demonstrates.

Case 3. Lynn L., age 4, was brought to us with a history of asthma of two years duration.

One paternal uncle had asthma; no other allergic history.

History and physical findings revealed a typical asthmatic child.

The following history, which proved to be of great interest, was given:

When the child was a mere babe he developed eczema of a very severe type, which seemed to be very difficult to control. He was taken to a number of dermatologists in various sections of the United States, but treatment seemed to aggravate symptoms, and the father mentioned that not until they quit all treatment did he get well. At 2 years of age his asthma developed. From time to time during the time that he had eczema he also had urticaria fairly severely.

After making some protein tests we went back again to our history and found that at the time his eczema and urticaria disappeared the child was of sufficient strength and age that he absolutely refused to take eggs in any form, or anything that eggs went into. The parents reported that he apparently could taste the smallest amount of egg that would be put in any food.

Testing revealed the following:

Duck feathers	**
Goose feathers	**
Chicken feathers	****
Cattle hair	**
Horse dander	**

Dog hair	**
Cat hair	**
Egg whole	****
Egg yolk	****
Egg white	****
Salmon	**
Peanut	****
String bean	**
Giant ragweed	****
Short ragweed	****
Western ragweed	****

The foods to which this boy was sensitive were entirely eliminated from the diet. His mother was advised concerning protecting him against feathers, and he was desensitized with the three ragweeds. At the end of the second year after desensitizing was instituted, while we were still caring for him, he developed urticaria, and the mother wrote us concerning it. She asked if I thought that the desensitizing was causing his hives. I wrote and told her that he had been on the same size dose for months and it would be almost an impossibility, and that I thought he was getting some egg—to which she replied that she knew that he was getting no egg. Two or three letters came about the condition, as it was bothering him a great deal, and each time I replied that I thought he was getting egg. She finally came in and told us that she had been doing some investigating work and had reached the conclusion that if egg was getting in the boy's diet that it could be only through baking powder which she had been using. She had written the companies and found that one baking powder contained egg white; another baking powder that she had been using did not, and when she would use the one containing egg white her boy would have hives as long as she would continue to use it. When she would not, her boy would be free from hives.

Discussion: This case illustrates the fact that patients may be so extremely sensitive that the minutest quantity of certain foods may produce rather marked allergic manifestations. This case illustrates the fact that extremely small quantities of a food may cause allergic symptoms.

MIGRAINE

Migraine in children is usually unrecognized by the general practitioner and frequently by the pediatrician.

Case 4. Louise K., age 5, has suffered from typical migraine since two years of age, has a wet nose, and has had typical attacks of asthma since 6 months of age.

Mother and maternal aunt have asthma. Maternal grandmother has migraine. Paternal uncle and paternal grandmother have asthma.

A history of asthma since a small child, of a severe type, was given. At about 2 years of age she complained of headache. At the same time she complained of headache she would have abdominal pain and at some times would have temperature. She was taken to the hospital once to have her appendix removed. This occurred during the time that she was having headache associated with abdominal pain. She developed a severe attack of asthma, and therefore the surgeon advised against operative procedure.

We found the following positive factors:

Wheat	****
Milk	****

Plum	**
Pumpkin	**
Potatoes	**
Duck feathers	***
Goose feathers	***
Chicken feathers	***
Horse dander	****
Cattle hair	****
Cat hair	**
Dog hair	**
House dust	**
Giant ragweed	****
Short ragweed	****

This little girl was taken off of milk and wheat and the other foods to which we found her sensitive. The animal danders were thoroughly eliminated, and she is being desensitized with the ragweed. We have observed her over a period of eight months. Since she has been on a diet she has had only one slight attack of migraine, which had previously occurred every ten days or two weeks. She has suffered no abdominal pain.

Discussion: Migraine in children is not uncommon. We have found from a large series of adults we have studied, who suffer from the syndrome known as migraine, that 30 per cent of them develop their symptoms before ten years of age, and another 20 per cent before fifteen years of age. In other words, we know that migraine is common in childhood. The average child complaining of headache in going to his family physician or even the pediatrician would in all probability be referred to the rhinologist or the oculist, or his gastro-intestinal tract would be studied, but migraine would not be suspected. The case has been presented to show that typical migraine occurs in children and that, like in the adult, the syndrome is not uncommonly associated with abdominal symptoms. Not only the general practitioner but the pediatrician should think of migraine when children come suffering from periodic headache, and when the surgeon sees abdominal pain associated with headache, both in children and adults, he should think of a possibility of food sensitivity as a cause of the symptoms of which they complain. Remember that migraine is not uncommon in childhood.

ECZEMA

I want to present this little fellow to show you a type of allergic manifestation that we see commonly in children.

Case 5. F. H., Jr., 2½ years old, was referred to us by one of the pediatricians at 6 months of age. He had suffered from rather severe eczema for two months.

Maternal grandmother has migraine.

On testing him we found him sensitive to the following foods:

Egg whole	****
Egg white	****
Egg yolk	****
Oats	**

The foods to which he was sensitive were removed from his diet, with freedom from eczema symptoms in one week's time. We have observed this little fellow during the last two years and he stays free as long as eggs are kept out of the diet.

Discussion: It appears to us that nearly all cases of eczema in children are based on an allergic background, and most of them are due to a specific sensitivity to food. Any case of eczema in children or adults, that has an allergic family history, surely should be studied from that standpoint. You probably are asking me in your own minds, "Should every case of eczema be studied from an allergic standpoint?", and I would answer that question in this way. Every case of eczema in children that has an allergic history should be studied from that standpoint as it is the most logical cause, and those cases of eczema in children, that have no family history of allergy and that have been studied otherwise without relief, should be tested and re-tested for a specific sensitization to food as a possible cause of trouble.

COLITIS

Should we think of a specific sensitivity to food in colitis or abdominal pain in children? We hope to prove by the history that this little fellow gives that we should.

Case 6. Lewis F., age 3. Here is a little boy we saw last summer with a history of eczema since he was first weaned, and a history of colitis since one year of age.

Mother has migraine; father has hay fever.

This boy has been perfectly well except for from twelve to fourteen bowel movements a day, and in the summer apparently infectious in type.

Protein testing revealed the following:

Milk	****
No other foods positive.	

Milk was taken out of this child's diet with a history that in ten days' time he was entirely free from any symptoms of mucus or frequent bowel movements. His bowel movements became normal and he is an entirely different child. Only two or three times has he gotten in difficulty, and each time the maid has given him milk in some form. The mother has learned that it takes only a small amount of milk, that is, the milk that goes in puddings, etc., to get him into difficulty.

Discussion: If we can scratch the skin, reaching the second skin, which is comparable to the mucous membrane of the

nose, eyes, bronchial tubes and gastro-intestinal tract, and by applying a small amount of milk protein produce a hive the size of a quarter with a large area of erythema, does it seem logical that this food should go into the gastro-intestinal tract? Does it not seem probable that it would produce swelling of the mucous membrane of the intestinal tract, thereby mucus and frequent bowel movements? I am sure that is what actually happens.

EPILEPSY

The last case I wish to show you today is one that is somewhat unusual but one of which I am very proud, as results have been striking.

Case 7. Francis L., age 13, came complaining of epileptic seizures 9 months ago. He has had hives all his life.

He has one sister with asthma; paternal grandmother has difficulty in taking milk. Her difficulty in taking milk is rather great, that is, it will produce marked headache and marked symptoms of "indigestion," as she says.

This boy is a bright looking fellow. His mother gave a history that during the last 9 months, when this difficulty appeared, he had had two severe convulsions a week, and would give all the classical symptoms of epilepsy, namely, biting the tongue, rolling his eyes, frothing at the mouth, and relaxation of the bladder sphincter. Sometimes he would be unconscious five, ten or fifteen minutes.

In testing this boy we found him markedly sensitive to milk and wheat. Both of these foods have been taken out of his diet. There was also taken out of his diet such foods as chocolate, nuts, and shell sea foods, which was done on general principles. No psychology was used on the boy or the mother.

This boy has suffered no attacks of epilepsy since he was put on the diet.

Discussion: There are a number of authentic cases of epilepsy due to a sensitization to food that have been relieved entirely by food elimination. This is one of them. We have two others. There is no question but what there are a certain number of epileptics whose trouble is due entirely to food sensitivity. The question naturally arises, "shall we test all epileptics?" By no means, but that epileptic child who has an allergic family history certainly should be tested and re-tested for a food sensitivity as a possible factor.

These seven children whom I have shown this morning represent seven manifestations of allergy, six common ones and one that is uncommon. I should like to impress upon you if I can the importance of food as one of the etiologic factors in the cause of asthma in children, and its importance as a secondary factor in seasonal

hay fever in children. I hope that I have impressed you with the fact that small amounts of food to which they are sensitive may produce marked symptoms, therefore in taking food out of the diet it should be done very thoroughly. Don't forget when children come complaining of headache, periodic in type, to ask concerning the family tree, because of the fact that it may be a migrainous headache. Remember that urticaria and eczema in children are probably in 100 per cent of the cases due to a sensitivity to food, and that colitis and abdominal pain is not uncommonly due to food, and that typical attacks of epilepsy may be due entirely to a food sensitivity and relief may be had by careful elimination of the food or foods to which they are sensitive. Remember also that these children are to become adults, and they retain their sensitivity, therefore these same manifestations of allergy will be seen in adult life, and are frequently seen.

I wish to leave the report of these seven cases before you and let you draw further conclusions.

These clinics discussed by Dr. Isaac A. Abt of Chicago, and Dr. Albert H. Rowe of Oakland, Calif.

—O—

GENERALIZED EDEMA OCCURRING ONLY AT THE MENSTRUAL PERIOD

William A. Thomas, Chicago (Journal A. M. A., Oct. 7, 1933), presents two cases of generalized massive edema occurring only at the menstrual periods. He gives the results and clinical picture as he has observed them. However, the migraines of menstruation, as numerous discussions bring out, are in many respects similar. At first he felt that there was the action of a diuretic substance of the anterior lobe. This is quite opposed to the constant diuresis that occurs about three days following delivery, at the time this substance disappears from the urine. The antidiuretic principle of the posterior lobe is well known and used in diabetes insipidus. It has been suggested that this clinical picture is the antithesis of diabetes insipidus. More confusing still is the definite information, brought out recently, that this substance obtained from the urine of pregnant women is of placental, not pituitary, origin. Possibly it is another prohormone activating the anterior pituitary or opposing the antidiuretic activity of the posterior lobe. The author feels that, however complex and interrelated these processes may be, the end-results—edema and diuresis—are functions of tissue thirst, depending on hydrophilic tissue states or the reverse; that is, extrarenal factors rather than any alternation in renal function.

THE JOURNAL

OF THE

Oklahoma State Medical Association

Issued Monthly at McAlester, Oklahoma, under
direction of the Council

VOL. XXVII FEBRUARY, 1934 No. 2

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Entered at the Post Office at Muskogee, Oklahoma,
as second-class mail matter July 28, 1912.

This is the official Journal of the Oklahoma State Medical Association. All communications should be addressed to The Journal of the Oklahoma State Medical Association, 203 Ainsworth Building, McAlester, Oklahoma. \$4.00 per year; 40c per copy.

The editorial department is not responsible for the opinions expressed in the original articles of contributors.

Reprints of original articles will be supplied at actual cost provided requests for them is attached to manuscripts or made in sufficient time before publication.

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Failure to receive The Journal should call for immediate notification of the editor, 203 Ainsworth Building, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

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PRINTED BY HOFFMAN-SPEED PRINTING CO., MUSKOGEE

EDITORIAL

OFFICER RESPONSIBILITY

Now that every county society has elected officers for 1934, it might be well for each of them to give careful consideration to the duties and obligations of their respective offices. Not only is each officer responsible to the members of the county society for the proper conduct of his office, but is also responsible to the state association and its individual members. The county society is a component unit of the state organization and must be conducted as such, with due regard for the Constitution and By-laws of the parent organization and having its progress and welfare always in mind.

The President of a county society is, during his tenure of office, the head of organized medicine in the county and as such must conduct himself with the dignity due such a position. He presides at all meetings and is primarily responsible for their regularity and the programs presented. He will appoint such committees as may be necessary to carry on the work of the society, using his good offices to maintain harmony among its members, represent the society in any outside activities and use his influence to present organized medicine to the laity in its true light.

The Vice-President is, of course, a potential President; if for any reason the President cannot complete his term he will automatically be promoted to this office, consequently he should at all times be familiar with the problems of the society and prepared to take the helm should the occasion demand.

The Secretary—here is the man with a job (not a position) and the success or failure of the county society is to a large extent in his hands. He must keep careful record of all business transacted; a record of membership and moneys received or expended. Usually it is his duty to give notice of all meetings and he may by his ingenuity be able to greatly stimulate attendance. Promptness in carrying on correspondence and insistence upon the prompt payment of dues with prompt remittance to the State Secretary are of great advantage in the conduct of the State office and will keep the county membership in good standing.

To the Board of Censors is given the responsibility of maintaining a high standard of membership; all applications come before this committee as well as all charges that may be preferred against a member and these matters must be judged with all fairness, keeping ever in mind the high calling of the medical profession and the desire of organized medicine to admit all who are qualified. It is a bad plan to elect an applicant to membership to reform him.

Delegates to the State Association should inform themselves as to the business of the Association, they should carefully study all committee reports as published, they should be familiar with the needs of organized medicine in their respective localities and the state at large and go to the state meeting prepared to

both vote upon and discuss these matters intelligently. By doing these things there will be much less of the time of the House of Delegates wasted and the solution of problems will be not only greatly expedited but more intelligent.

There is nothing new in this editorial—just to remind you of a few well known facts. Some progress will follow your consideration of these matters.

CONTRACEPTIVE LEGISLATION

Physicians and medical societies throughout the United States, no matter which side they take on such a highly controversial subject, are watching with interest proposed legislation before the Seventy-third Congress calling for amendment of the present federal birth control laws. These amendments, commonly known as the "Doctors Only" bills, are Senate Bill No. 1842, sponsored by Senator D. O. Hastings of Delaware, and House Bill No. 5978, introduced by Representative Walter Pierce of Oregon.

This proposed legislation would amend the existing federal restrictions so as to legalize the sending or receiving of contra-ceptive information, instruments and medicines between physicians and the patients, medical colleges and hospitals and from physician supply houses and manufacturers.

Under the present statutes, penalties of heavy fines and imprisonment may be inflicted for transporting any article intended for the prevention of conception or for receiving for distribution to others, any such article that has been transported interstate or by the Government mails. For several years there has been a controversy as to the propriety of the present Federal legislation, as there are many who contend that the Constitution does not grant the power of law to abridge the right of the physician to protect the life and health of his friends and patients.

The sponsors of the "Doctors Only" bills merely seek to place the responsibility for prescribing contra-ceptive action where it rightfully belongs—in the hands of the medical fraternity.

Leading doctors also contend that this change in the statutes will greatly aid in the proper care of cardiac, tubercular and diabetic patients where pregnancy is contra-indicated and where conception

would necessitate a therapeutic currettment.

The far-reaching importance of these bills is daily becoming more apparent to American physicians. The passage of these laws will depend largely upon the expressions received from the physicians and there is yet time to express such views to their Congressman or the Senator and Representative mentioned above who are sponsoring these bills to amend the present laws for the interest and protection of the medical profession.

THE PRECANCEROUS CERVIX

In the Cancer Clinic Bulletin of the Massachusetts Department of Public Health is a discussion of the precancerous cervix that reveals some very pertinent facts. No uniform policy could be agreed upon as to just when a lacerated cervix should be repaired, whether immediate repair, operation within a year, only in response to symptoms, or after the child bearing period—all had enthusiastic supporters, but that a torn cervix should be repaired by the time of the menopause all agreed.

The properly repaired cervix is not the one that develops cancer, as is clearly shown in the now familiar study of 5,962 cervix operations reported by Pemberton and Smith, in which careful follow-up disclosed only five known to have developed cancer. Again, of 669 cases of cervical cancer, only twelve had had a repair of a cervix previous to the development of cancer.

Another point not to be overlooked in the development of cervical cancer is the routine examination of all tissues removed in operating on the cervical canal or in curetting the uterine cavity. Attention is called to the fact that of 675 cases of cancer of the cervix, 16, or 2.3 per cent, would have been missed but for the use of the microscope in the hands of one who knew tissue diagnosis.

GUEST SPEAKERS FOR TULSA MEETING

The Committee of the Council to arrange for the Tulsa meeting has been very fortunate in obtaining two internationally known authorities to appear upon the general program. Each of these men will give

an hour on Tuesday and Wednesday mornings.

The first of these speakers is Dr. Charles F. Craig, Professor of Tropical Medicine of the Tulane University School of Medicine. For many years Dr. Craig has been a leader in the study of tropical diseases, such as amebic dysentery. He has written many books on the subject, and has contributed to the outstanding medical encyclopedias on the subject of tropical diseases. Dr. Craig is a retired Colonel in the Medical Corps of the United States Army, and was many years director of the Army Medical School, Washington, D. C., as well as editor of the American Journal of Tropical Medicine. Much of our knowledge of amebic dysentery is the result of his well-known studies.

Our other guest speaker will be Dr. Donald C. Balfour, of the Mayo Clinic, also professor of Surgery of the University of Minnesota Medical School; Chief of Surgery, Mayo Foundation.

The first day Dr. Balfour will talk on "The Duodenum From a Medical and Surgical Standpoint"; and on the second day his subject will either be "Benign and Malignant Lesions of the Stomach and Their Management," or "The Significance of Splenomegaly."

Editorial Notes—Personal and General

DR. R. C. SULLIVAN, Ardmore, is reported ill at his home.

DR. A. L. BLESCH, Oklahoma City, is reported ill at the Wesley Hospital.

DR. AND MRS. D. D. MCHENRY, Oklahoma City, spent the latter part of January in Florida.

DR. CHARLES E. WHITE, Muskogee, has been appointed county health officer to succeed Dr. E. H. Coachman, who resigned in December.

DR. AND MRS. ELIAS MARGO, Oklahoma City, have returned from Kansas City and Chicago where Dr. Margo attended the meeting of Orthopedic surgeons.

DR. D. O. SMITH, Tulsa, is the new President of the St. John's Hospital staff; Dr. F. L. Flack, Vice-President; Dr. J. E. McDonald, re-elected Secretary-Treasurer.

DR. AND MRS. SAMUEL R. CUNNINGHAM, Oklahoma City, have returned from Chicago where Dr. Cunningham attended the meeting of the American Academy of Orthopedic surgeons.

DR. WILL C. WAIT, McAlester, was elected President of the Staff of Albert Pike Hospital, at their meeting in January. Dr. J. E. Davis, Vice-President and Dr. J. A. Munn, re-elected Secretary.

DR. J. S. ROLLINS, Prague, opened the Rollins Hospital on December 16, 1933. This is a modern ten bed hospital with X-ray and laboratory facilities. Associated with Dr. Rollins are Doctors Frank H. Norwood and Ned Bursleson.

DR. C. M. PEARCE, McAlester, Pittsburg county superintendent of health for the past eight years has resigned his commission. Dr. Pearce will study in eastern clinics for several weeks after which time he will establish a general practice in McAlester.

DR. W. K. WEST, Oklahoma City, has been appointed the member of the Council of the Southern Medical Association from Oklahoma for a regular Council term of five years, the appointment having been announced recently by the President, Dr. Hugh Leslie Moore of Dallas, Texas. Dr. West succeeds Dr. Lea A. Riely, Oklahoma City, who, having served the constitutional limit, was not eligible for reappointment.

IF A SUFFICIENT number of candidates are interested, the American Board of Ophthalmology will conduct an examination at Butte, Montana, July 16th, 1934, at the time of the meeting of the Pacific Oto-Ophthalmological Society. Applicants for the certificate should immediately communicate with the Secretary, Dr. Wm. H. Wilder, 122 South Michigan Ave., Chicago, Ill.

ANNOUNCEMENT

The Southern Surgical Congress will hold its fifth annual assembly in Nashville, Tennessee, March 5, 6, and 7. The Andrew Jackson Hotel will be hotel headquarters and the lectures and exhibits will be in the War Memorial Building.

Many distinguished guests from all parts of the United States will participate in this program.

For further information write Dr. B. T. Beasley, 1019 Doctors Building, Atlanta, Georgia.

AN INCOMPLETE STATEMENT REGARDING THREE PUBLIC HEALTH PROJECTS BEING CARRIED ON IN OKLAHOMA

Aside from the usual program carried on for the prevention of disease by the State Health Department, there are at the present time three major public health projects under way in this State, which we believe have been surpassed by no state and equalled by but few. The projects are as follows:

Malaria Control
Community Sanitation
Immunization

The set up for Malaria Control is as follows:

The State Health Department selects competent sanitary engineers to direct the work. Drainage projects are prepared and estimates made as to the probable cost of draining swamps, straightening streams, etc., thus eliminating natural breeding places of the mosquito. When these projects are approved, and there has been approved up to the present time fifty-two, men and teams are drawn from the C.W.A. to carry on this work. We are now and have been us-

ing three thousand five hundred men each day and one thousand teams and scrapers.

Community Sanitation, consists mostly in the construction of sanitary earth pit privies of the concrete slab and riser type. One hundred and ninety projects of this nature have been approved. About sixteen hundred men are employed daily in digging pits and pouring concrete and on an average of about two thousand privies are being installed weekly. A great many projects are now on file but have not been approved on account of the uncertainty of when Federal aid may be withdrawn.

A State-wide immunization campaign against diphtheria, typhoid fever and smallpox is being carried on. This work is usually under the supervision of the county and city superintendents of public health, however, any doctor in the State is being furnished the necessary biologics. At the present time we do not have definite figures to offer on the immunization campaign, however, as near as we can figure at this time, about 200,000 children have already been immunized against diphtheria.

The figures will be somewhat lower on typhoid fever and smallpox for the reason that a great deal of work has already been done in this field.

The physicians of the State, together with the nurses furnished by the C.W.A. has made this campaign possible.

—GEO. N. BILBY.

RESOLUTION PASSED BY THE CARTER COUNTY MEDICAL SOCIETY

Whereas, our friend and fellow member Doctor David Autrey of Marietta, Oklahoma, has been suddenly called from us, we, the committee of the Carter County Medical Society, wish to present the following resolution to you and Society in special session, this 9th day of January, 1934.

First, to express our deep personal feeling of the loss of a valued friend, so well known and greatly appreciated by each and every member of this Society.

Second, that in the passing of Doctor David Autrey, the entire system of organized medicine, of which he was a leading factor has suffered an irreparable loss.

Third, be it resolved that the Society extend its sincere sympathy to his wife and members of his family and his legion of friends.

WALTER HARDY, Chairman
J. C. McNEESE
F. W. BOADWAY.

DOCTOR ANDREW PINKNEY BROWN

Dr. A. P. Brown, Davis, died in Oklahoma City, following an operation.

Dr. Brown was born at Cumby, Texas, July 21, 1869. Interment was in that city.

He is survived by his wife and one son.

DOCTOR GEORGE W. GOSS

Dr. George W. Goss, pioneer physician of Pawhuska, died January 10th following an illness of about six weeks.

Dr. Goss was born in Smithville, Mo., December, 1869, graduated from the University of Kansas and obtained his M.D., degree at the Kansas City Medical College.

He is survived by his wife and four daughters.

DOCTOR ROBERT J. BARRITT

Dr. R. J. Barritt, well known physician of Pawhuska, died in Research Hospital, Kansas City, January 10th, after a long illness.

Dr. Barritt came to the United States from Hamilton, in the Bermuda Islands, at the age of 17 years; graduated from Tufts Medical College, in Boston. After internship in Hartford, Conn., he came to Pawhuska, where he lived until a short time before his death.

Dr. Barritt had retired from practice about two years ago on account of ill health.

He is survived by his wife, father, three sisters and three brothers.

DOCTOR EMMETT JOHNSON

Dr. Emmett Johnson, Kinta, died January 1, 1934. Born September 11, 1866, in Oregon, Dr. Johnson moved to Mississippi in the early nineties. He graduated from the University of Tennessee School of Medicine in 1900, moving to Kinta in 1902, where he lived until his death.

He is survived by one daughter and two sons.

RECONSTRUCTIVE SURGERY AND OLD FACIAL BURNS

Howard L. Updegraff, Hollywood, Calif. (Journal A. M. A., Oct. 7, 1933), believes that reconstructive surgery of old facial burns should be avoided if possible until complete healing has taken place. The possibility of loss or impairment of various special sense organs may necessitate earlier surgery. Adherent eyelids, nasal contours and ears are best released by the use of Stent grafts. The release of major contractions in areas difficult to immobilize and dress correctly may be accomplished by the use of intradermal grafts, tunnel grafts and small tube flaps. The basal metabolic rate should be checked and, if low, thyroid medication should be forced. Autogenous bacteriophage therapy is helpful if positive Rose-nau tissue cultures can be made. Early roentgen therapy is of benefit following surgery. Endotracheal anesthesia is the method of choice in the reconstruction of old facial burns.

ABSTRACTS «» REVIEWS «» COMMENTS AND CORRESPONDENCE

DERMATOLOGY, X-RAY AND RADIUM THERAPY

Edited by William E. Eastland, M.D.
Lain-Roland Clinic, M. A. Bldg, Okla. City

Divided Doses of Typhoid Vaccine in the Fever Therapy of Neurosyphilis, J. R. Driver, M.D., and Henry C. Shaw, M.D., Cleveland, *Journal American Medical Association*, Volume 101, No. 26, December 23, 1903.

This article deals with the fever therapy method of treating neurosyphilis by divided doses of typhoid vaccine in accordance with the method originated by Nelson. The authors have treated a series of 19 cases and draw conclusions therefrom, the results of which are given below.

Formerly the principle of treating syphilis was by the injection of a foreign protein with a single dose of typhoid vaccine. Nelson conceived the idea of double or broken doses given at short intervals. Driver and Shaw obtained results very similar to Nelson in that the giving of one dose of typhoid vaccine intravenously followed in two to four hours by another such dose caused a rise in temperature to almost any desired degree. The value of such a method is that it eliminates severe constitutional untoward effects resultant from malarial treatment. Also, it obviates the difficulty in obtaining the malarial infection by injection. The essayists repeat that it is a moot question in regard to the acting agent; that is, whether it is the elevated temperature or the action of the parasite in malaria that produces the effect upon the syphilitic individual. They are inclined to believe that it is the elevation of temperature and hence, the divided-doses method of typhoid vaccine is as efficacious as malaria. This method has been used particularly in neurosyphilis and Wassermann-fast syphilis. Often improved results can be obtained from chemotherapy following injection of typhoid vaccine. Further work along this line is essential to come to a final conclusion.

The Therapy of Actinomycosis, With Case Showing Lumbar Spine Involvement, Vincent W. Archer, B.S., M.D., and W. Allen Barker, M.D., University, Virginia, *The American Journal of Roentgenology and Radium Therapy*, Vol. XXX, No. 4, October, 1933.

The authors call attention to the fact that actinomycosis is much more common in human beings than the literature indicates. In a tabulation of reported cases it was found that the disease is especially prevalent in the upper Mississippi Valley region. It was found by Archer and Barker that the disease is distributed in the head and neck in 60% of the cases, in the abdomen 18%, and in the thoracic cavity 14%. Attention was called to the fact that the portals of entry in order of frequency are first, the oral cavity; second, the gastro-intestinal tract; third, the respiratory tract; fourth, skin abrasions. The chewing of straws, weeds or grain is the method of in-

tro-duction into the oral cavity and frequently into the gastro-intestinal tract. Inhalation causes pulmonary involvement, as occurs around threshing machines. Bone involvement is considered to be by direct extension through the skin and by metastasis. Many cases are incorrectly diagnosed chronic appendicitis and are operated only to have a sinus occur at a later date. The thoracic form of the disease simulates catarrh or mucous bronchitis, bronchiectasis, bronchopneumonia, tuberculosis and lung abscess. Unfortunately X-ray is not pathognomonic. Skin lesions are characterized by local, dusky red swellings, deep fluctuating nodules and sinuses exuding a purulent discharge. Diagnosis should be proved by finding the ray fungus.

The therapy of this condition varies with the anatomical structures involved. In abdominal and thoracic cases surgery has been inadequate except for the purpose of establishing drainage. Massive doses of potassium iodide solution up to 250 minims three times a day are indicated. The outcome in all thoracic and abdominal cases cited ended fatally. It was found that deep X-ray therapy over the site of the infection caused considerable amelioration of symptoms and prolonged life. In a few cases of bone involvement mentioned, X-ray and surgery cured some, and in other instances surgery alone; hence, the gist of this article indicates that the approved method of treatment is large doses of potassium iodide solution, X-rays and radium locally, and surgery to establish thorough drainage when indicated.

Erysipeloid Occurring Among Workers in a Bone Button Factory, George B. Lawson, M.D., Roanoke, Virginia, and M. S. Stinnett, M.D., Buchanan, Virginia, *Southern Medical Journal*, Vol. 26, Number 12, December, 1933.

The condition of erysiploid reported in this article is relatively infrequent in Oklahoma, but since it occasionally does occur it is interesting to know more about it. This article concerns a report of erysiploid occurring in a factory in Virginia that makes buttons out of bones. The employees vary from 150 to 210 workers and in a period of thirteen months' time 210 cases of this infection had been under observation, due to the fact that the workers traumatized their fingers in sawing and cutting buttons out of bone. Clinically, it was observed that the infection appeared three or four days after injury, and lasted from fourteen to twenty-one days. Often it starts on one finger and creeps proximally onto the hand or onto the adjacent finger, and creeps to the distal end. Recurrences up to as high as four times were observed. Although lymphangitis of the arm was observed with epitrochelear adenitis, the infection per se rarely ever extended beyond the wrist.

In those employees working in the fertilization department, in which bones were ground, chest conditions developed by inhalation of the bone dust. On coughing up particles of the bone dust the patients were usually relieved, but most of them were forced to resort to other work to prevent a recurrence of the symptoms. Five workers developed conjunctiv-

itis, lachrymation, photophobia and marked edema of the eyes due to bone dust settling there. This condition cleared up under a change of occupation and simple treatment.

The authors tried many local treatments but none seemed to change the course of the disease except ten per cent salicylic acid ointment and this helped a great deal.

Aas for the bacteriology, the state health department worked in cooperation with the authors and were able to isolate the bacillus of swine erysipelas.

This report therapy adds one more hazard to the multiple ones incident to trades.

Radiation in Primary Operable Breast Cancer, Douglas Quick, M.B. (Tor.), New York, Journal American Medical Association, Vol. 101, No. 27, December 30, 1933.

This article is of unusual value in that it reports a survey of the status of radiation in connection with breast cancer, as presented by an able man. In the preliminary part of the paper several pertinent factors are revealed, among which are the following: 95% of all patients coming to operation for breast cancer have axillary nodes involved (discussion of the paper by Portmann, from whom these figures were quoted, changed the involvement to 85%); that 70% of all patients coming to operation have intra-thoracic involvement; that a careful review of all patients coming to operation at least 70% are dead from extension of the disease at the end of five years, and the majority of the remaining 30% ultimately die of cancer. These facts are relevant to surgical treatment alone.

The author then considered the combined radiation therapy with surgery; in the first instance, postoperative radiation was dealt with, revealing Portmann's results which showed a 10% gain in five-year cures over surgery alone. Pfahler showed in over a thousand cases that the combined treatment gave a gain of 90%, as compared to surgery alone.

The second consideration was that of pre-operative radiation. The consensus of opinion by radiotherapists is that pre-operative irradiation is far superior to postoperative radiation. The radiation is done by deep X-ray therapy, utilizing 200 kilovolts and heavily screened. Lighter machines giving less kilovoltage are entirely inadequate. Quick observed that there is an unusual absence of skeletal metastases with pre-operative radiation.

The third consideration on radiation was of the accessory type in which irradiation to the ovaries was given, but the conclusions were that the evidence failed to support such a theory.

The fourth consideration is irradiation at the time of operation in which gold radon seeds are planted at certain points. These are of value in a restricted number of cases.

Considerable work has been done using radiation as a sole means of treatment of breast cancer. Very favorable results have been obtained by such a method, but it is yet too soon to depend upon this method alone. Biopsy can be safely done in breast cases following preliminary irradiation.

EYE, EAR, NOSE and THROAT

Edited by Marvin D. Henley, M.D.
911 Medical Arts Bldg., Tulsa

Rodent or Mooren's Ulcer of the Cornea. Sanford R. Gifford, M.D., Chicago. Archives of Ophthalmology, December, 1933.

The author gives a historical account of rodent ulcer of the cornea as described by Mooren in 1867, and reports three cases with healing with a visual acuity at the last testing of 20-50, 20-30, and 20-40 respectively. The literature shows that rarely a vision of 20-200 results from this disease. A search reveals seventy case reports published, only two of which are by Americans. Schieck says: In view of our ignorance of the nature of the disease and the tendency to relentless progress, it is a severe task to treat a patient with rodent ulcer. Usually one is in a hopeless battle. Gifford states that this condition is not so rare but that most ophthalmologists should see one or more cases during the course of a lifetime. Perforation never occurs spontaneously but enucleation is sometimes resorted to for the relief of pain. The three theories of the etiology of the disease are: (1.) An infectious agent; (2.) a general state of malnutrition, and (3.) a trophic disturbance due to primary pathologic changes in the fifth nerve. Some of the various forms of treatment used by different prominent ophthalmologists are: (1.) Building up of the great resistance by injections of foreign proteins; (2.) the use of cod liver oil; (3.) Bucky's border rays; (4.) roentgen therapy; (5.) phototherapy; (6.) cauterization; (7.) attempts to produce hypotony; (8.) puncture of the cornea with actual cautery; (9.) fistulization of the cornea and (10.) the use of the conjunctival flap. The failure in the last mentioned method is usually due to the fact that the flap covers only the affected area when it should cover the entire cornea. After the healing is complete (two to three months) a small opening is made in the conjunctiva which then retracts around the unaffected cornea. The diagnosis was made in case one after five weeks of active treatment. A keratotomy four mm. long and just in advance of the central border was done. The wound was reopened seven times during a period of eleven days. In case number two, a diagnosis was made on the sixth day of observation and treatment. On the thirteenth day a delimiting keratotomy just central to the advancing border was performed. This was kept open twice daily for ten days. Case number three had had pain and impaired vision for four weeks. Trichloroacetic acid was used and a conjunctival flap was drawn beyond the advancing border. In closing the author points out the fact that the cosmetic effect of the delimiting keratotomy is much better than that obtained with a conjunctival flap. It is a safe and simple procedure. He says that apparently the effect is due to increased nutrition and supply of antibodies resulting from a reduction of tension and perhaps also to the epithelial barrier formed at the site of the incision. Such an effect may be conceived to be of value whether the disease is infectious or degenerative.

The Leaking Brain Abscess. Dan McKenzie, London. The Journal of Laryngology and Otology, December, 1933.

A leaking brain abscess is the type which ruptures spontaneously and gradually discharges, internally or externally, and not those which burst into ventricles

or meningeal spaces flooding the cerebrospinal system with a virulent pus and causing death within a few hours. Internal leaking brain abscesses are uncommon in the literature. Cerebellar abscess leakage is rare probably because of its location relative to the mastoid region and the cranial bony wall. The surprising fact about the internal drainage into the meningeal spaces is that the patient sometimes recovers. Three such cases are reported, one with a fatal termination. Mental hebetude and other signs and symptoms of meningitis were characteristic. The case that did not survive entered the Central London Throat and Ear hospital with meningeal symptoms. Spinal fluid was turbid and contained coliform bacillus. Operation disclosed a cerebellar abscess which was drained and a tube left in situ. Over a period of three months this tube was expressed no less than five times and after each time the evidence pointing to a meningitis recurred and persisted until the drainage was again established. The patient finally died and at post mortem the clinical conundrum was solved by the finding of another separate and distinct cerebellar abscess which had never been reached. The three cases reported of internal leakage are cerebellar. The temporo-sphenoidal abscess is usually much larger than the cerebellar and so when the massive collection of purulent material is suddenly discharged, the quantity is too great for the local defenses, and the patient usually dies. However, there is a case recorded of recovery where the meningeal spaces were irrigated. The author has thirteen collected cases of external leakage. The common point of spontaneous drainage is along the route of infection as it enters the brain or what the author terms the abscess-stalk. This is not always true for there is a case recorded which showed at necropsy to be draining into the left sphenoidal sinus from a large temporo-sphenoidal abscess reaching into the pituitary fossa. The etiology was determined to be nasal sinus suppuration and the abscess had ruptured into the lateral ventricle. The external leakage is rarely enough to prevent the increase in size of the abscess, spread of the infection and increase in intracranial pressure. R. Ritchie Rodger had a case with external drainage under observation for four years. If the infecting organism is of a virulent type even free surgical drainage sometimes proves unsuccessful. Much then depends on the virulence of the organism. Nevertheless leakage does alleviate the symptoms and slows the course of the infection so that when operated the chances of regaining normalcy are better. Without operation the progress is slowly downward and the end, though delayed, is seldom in doubt. There may be an extradural as well as a brain abscess and if only one is present the differential diagnosis may not be made until operation. Pain and headache are almost instantly eliminated when a brain abscess ruptures externally, but watchfulness must be continued as the infection may spread without pain and death ensue. The general condition of the patient is of great importance.

Adenoids and Immunity. Henry B. Lemere, M.D., Hollywood, Calif. *Archives of Otolaryngology*, September, 1933.

A review of a previous paper defined the adenoid as a protective structure guarding against nasal infections and stated that in over three hundred tests given school children in whom the adenoid was left after a tonsillectomy, it was found that after daily forceful blowing exercises, nasal breathing improved and a decrease was seen in colds and their accompanying disorders. To prevent the more serious infections following head colds, especially in children, proper

feeding and clothing are necessary as well as preservation of the adenoid. Removal of adenoids is recommended if mechanical cleansing has failed to obtain satisfactory results and if it is a certainty that the adenoid is the source of trouble and not some other obstruction in the nasopharynx. A series of patients in the Marion Davies Foundation were observed and as a result of nasal hygiene improvement occurred in mouth breathing, very few patients had acute suppurative otitis media, infected tubal openings cleared up, recovery from colds was more rapid and all were free from an acute empyema. A broad nasal bridge sometimes results from chronic catarrhal conditions. Among the laity and also some medical men this broadening is thought to be due to adenoid tissue but the author claims that it is produced by obstruction in the middle fossa and ethmoidal region. Using the therapeutic measures mentioned this condition shows marked improvement over a period of months or a year or two. The parents and children are given detailed instructions as to routine home treatment including medication, cleansing, blowing, deep inspiration, forceful expiration, etc. A part of a monograph by T. B. Layton, of London, England, was included in this paper and was similar to Lemere's statement regarding nasal hygiene and the preservation of the adenoid.

A Report of Seven Cases of Partial Thoracic Stomach With Short Oesophagus. Monkhouse and Montgomery, London. *The Journal of Laryngology and Otology*, November, 1933.

The prime object of this article is to emphasize the importance of a careful and thorough study of partial thoracic stomach with short oesophagus. It is not an easy matter to write a monograph on any subject and the difficulty is increased when due to the rarity of the condition discussed the clinical material is limited. This is a condition in which the oesophagus is congenitally short and in which the deficiency is made up by some portion of the stomach passing through the oesophageal hiatus. Usually this condition was found on post mortem examination as up until 1930 diagnosis depended on radiological evidence alone. Endoscopic and fluoroscopic examinations and a specialized technique of barium ingestion and the taking of roentgenograms now assist in the diagnosis. Seven cases are diagnosed and reported. Diagnosis is made with the fluoroscope, roentgenograms and the oesophagoscope. The special technique for the roentgenograms is: The patient lies with his head lower than his hips and then turns left half or into the right anterior oblique position. Fluid emulsion of barium is first taken through a tube and its progress observed by means of a fluoroscope and then a thicker solution is swallowed. Pictures are taken at the end of inspiration. By laying the patient flat on his back after barium had been ingested and taking a picture, this condition (partial thoracic stomach) could not be detected because the dilatation above the diaphragm would not fill with barium in this position. The barium must be swallowed when the head is lower than the hips in order to show (a.) the oesophagus opening into a dilated sac above the diaphragm; (b.) no thin stream of barium representing an abdominal oesophagus passing below the diaphragm, and (c.) that the oesophagus is not contorted or curled back on itself. If there is an impediment, carcinoma, cardio-spasm and other strictures must be eliminated. Para-oesophageal hernia, diverticulum of the lower end of the oesophagus, other rare conditions and the physiologically normal must be differentiated. Primarily the difficulty in swallowing

was attributed to the ulcerated stricture but after this was corrected by repeated dilatations there persisted this symptom and on examination there was found to be present a muscle spasm below the site of the original stricture which could be overcome by steady pressure with a bougie during inspiration. Carcinoma located here produces difficulty in swallowing which is steadily progressive but in the cases reported it was intermittent in character and many times not of an increasing severity. Blood can and does occur in both conditions. Pain is a constant symptom and resembles the flatulent dyspepsia of cholecystitis. Biopsy at the level of the ulcerated stricture shows gastric mucous membrane. The distance of the lesion from the incisor teeth, as measured by the oesophagoscope and the X-ray locate the pathology well above the diaphragm. The oesophagus shows an ulceration which has the appearance of a malignancy. The article is freely illustrated with microscopic sections, X-ray pictures and drawings and has a fairly extensive bibliography of the recent work on the subject.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D.
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Slipping of the Epiphysis of the Head of the Femur; Its Relation to Renal Rickets. J. F. Brailsford. *Lancet*, I, January 16, 1933.

The writer describes the X-ray appearance of the upper end of the femur in the pre-slipping stage of slipped upper femoral epiphysis. There is some increase in the density of the metaphyseal periphery of the epiphysis, some increase in the metaphysis, in part or throughout its whole breadth, with some wooliness of the outline of extremity of the diaphysis. These features should be sought for in children suffering from discomfort or pain in the hip joint. The recognition of these features should lead to measures designed to prevent slipping.

The writer is of the opinion that disease, weight bearing and strain, and trauma all play a part in the production of this condition. There is some disorganization of the metaphysis which lessens its capacity to withstand the normal sheering stresses and strains, and the condition may be brought into prominence sooner by some trauma which would not have affected the normal femur. Further he believes that renal rickets may produce such a disorganization of the metaphysis. Several cases of slipped epiphysis are presented which showed albumin in the urine (no chemical findings of the blood are presented). The X-ray appearance of bones showing renal rickets is characteristic and also the changes may be seen in only one joint. This characteristic appearance is a thickening of the metaphyseal area. Consolidation and repair of the metaphyseal tissue in renal rickets may be seen by roentgenographic examination, to take place in as short a time as one month. Renal rickets should be excluded before any operative procedures are undertaken on these cases. The urine should be examined for albumin on several occasions in these cases.

Signs and Symptoms of the Acute State of Anterior Poliomyelitis in the 1931-1932 Epidemic. S. F. McDonald. *Med. J. Australia*, January 1, 1933.

In the "dormedary" type, the initial stage, lasting two to six days, strongly resembles dengue fever, but without neck or spine rigidity. Unless an abortive case, after a few hours to several days, temperature

again rises, there develops spinal rigidity, and paralysis may or may not occur. In the first stage the spinal rigidity, and paralysis may or may not occur. In the first stage the spinal fluid cells are usually absent; at the beginning of the second stage there are a few polynuclears, and, with the localization of the disease, the lymphocytes and mononuclears increase.

Roughly, the cell count was proportional to the severity of the infection. Lumbar puncture was considered justifiable in any child with fever, headache, prostration, stiff neck and back. It was always done under general anesthesia; but was not done where the child was desperately ill or after paralysis had set in.

Muscle tenderness came only after the onset of paralysis. The greatest susceptibility was in the age group from two to six years; but the older children tend to be more seriously crippled, bearing out the view that paralysis is more severe in the more hard worked muscles.

The fatal cases occurred in those of the overwhelming toxæmic type, and in the ascending Landry type. The cell count was high in the Landry type, low in the toxæmic, encephalitic type.

A Few Notes On the Serum Treatment of Acute Anterior Poliomyelitis. Alec E. Paterson. *Med. J. Australia*, January 5, 1933.

The advised dose was fifty cubic centimeters, twenty cubic centimeters to be given intrathecally and thirty cubic centimeters intravenously. The serum was given to seventy-four patients and the results were "beyond all expectations." The author feels that had more serum been available, larger doses would have been given and even better results obtained. As to method of administration, the patient was anesthetized and the serum given: (a.) at body temperature, very slowly, through the spinal puncture needle in situ, an additional five cubic centimeters of spinal fluid having first been withdrawn; (b.) intravenously by cutting down and exposing a vein in the forearm.

The serum produced a profound general reaction, as a rule, which was considered beneficial. The reaction began in about four hours and lasted about twelve. It produced, first, great misery, then a sudden change to comfort. The spinal rigidity required about six days for disappearance. The author believes that spinal puncture and spinal therapy had no causative effect on spinal rigidity.

Contrary to the belief that, once paralysis has set in, serum is useless, the author thinks that no matter to what extent paralysis is present, so long as the patient is febrile, serum is beneficial.

I wish to list the following articles, reprints of which have recently come to my desk:

"Osteotomy for Flexion Deformity at the Hip Due To Anterior Poliomyelitis," and, "Block Osteotomy of the Femur," by Edwin W. Ryerson, M.D., Chicago, Ill.

"Backache," and "The Backgrounds and Foregrounds of Orthopaedics," by Joel E. Goldthwait, M.D., Boston, Mass.

"The Prevention of Accidents and Complication In the Course of Treatment in Chronic Osteomyelitis." H. Winnett Orr, M.D., Lincoln, Nebr.

"The Conservative Treatment of Backache," by Lloyd T. Brown, M.D., Boston, Mass.

"Primary Haemangioma of the Spine," by Leonard Barnard and R. G. Van Nuys, Oakland, Calif.

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
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The Effect of Pregnancy on the Urinary Tract. Harry P. Lee, M.D., and William F. Mengert, M.D., Iowa City. *Journal A.M.A.*, January 13, 1934, Volume 102, No. 2.

This is an interesting article which in some respects differs from the ordinary view taken by the profession as regards the effects of the pressure of the uterus on the lower ureters.

These gentlemen reach the following conclusions:

1. Dilatation of the upper urinary tract to some degree occurs in every pregnancy and is a normal concomitant of pregnancy.

2. This dilatation subsides rapidly after the termination of pregnancy, provided the pregnancy, delivery and puerperium are normal, and in many cases a marked decrease in the size of the ureters and pelvis can be demonstrated within twenty-four hours following delivery.

3. Abnormal delivery or an abnormal puerperium interferes with the return of the upper urinary tract to normal.

4. In ten normal pregnant women, retrograde pyeloureterograms failed to show any evidence of obstruction anywhere along the course of the lower ureter.

5. In fifteen normal pregnant women, draining the ureters with ureteral catheters for twenty-four hours, in order to overcome any obstruction that might possibly be present in the lower portion of the ureters, produced no change in the degree or character of the dilatation of the upper urinary tract.

6. With the exception of ovarian cysts and ovarian abscesses, pathologic conditions in the female pelvis do not cause dilatation of the upper urinary tract.

7. Evidence is presented which disproves the theory of lower urethral obstruction as the cause for dilatation of the upper urinary tract in pregnancy.

—LeRoy D. Long.

Treatment of Disease of the Upper Part of the Digestive Tract, Preoperative and Postoperative. James F. Weir, M.D., and Waltman Walters, M.D., Rochester, Minn. *Journal A.M.A.*, January 13, 1934, Volume 102, No. 2.

This is a valuable article. The conclusions arrived at are:

1. Preoperative and postoperative treatment is definitely indicated in the complicated diseases of the upper part of the digestive tract and has markedly lowered the operative mortality and the postoperative morbidity.

2. In the gastroduodenal cases such treatment is important, especially in cases of anemia and obstruction.

3. Obstruction is the most common complication in such cases and requires attention to the stomach locally and to the systemic effects of starvation, dehydration and toxemia. Intravenous saline and dextrose solutions constitute the chief therapeutic weapons.

4. Immediately after operation continued careful observation is necessary in cases of obstruction, with

resumption of intravenous medication if any untoward symptoms occur.

5. In an occasional case in which gastro-enterostomy otherwise is successful, symptoms of retention develop about seven to fourteen days after operation, and usually the response to adequate treatment is satisfactory.

6. Subsequent care of the patient with ulcer should be judicious and not engender psychoneurotic tendencies.

7. In cases of jaundice, accurate and complete diagnosis, evaluation of the presence or possibility of hepatic or renal insufficiency or the tendency to hemorrhage, institution of measures for their control, and selection of the most opportune time for operation are the chief preoperative indications.

8. A high intake of carbohydrates and fluids and administration of calcium salts, solutions of dextrose and transfusions constitute important therapeutic procedures.

9. Postoperative continuation of these procedures improves the patient's condition, aids in warding off hepatic or renal insufficiency and shortens convalescence.

10. Frequent chemical examination of the blood before and after operation gives important information as to the course of the disease.

Important features in the pre-operative preparation of patients with obstructive lesions of the stomach or duodenum are; first, control of the dehydration toxemia, and second, emptying of the stomach and keeping it free from retained material. If this is done the surgeon will have a clean stomach of normal size with which to work.

Dr. Levin of New Orleans (designer of the Levin tube) in discussing this paper emphasizes the necessity of continuous gastric lavage for upper abdominal distention following operation.

—LeRoy D. Long.

Relief of Acute Adhesive Intestinal Obstruction; By Suction Applied to Inlying Duodenal Tube. Dr. Owen H. Wangenstein. *Surgery, Gynecology and Obstetrics*, January, 1934, Volume LVIII, No. 1.

This is an editorial on this most important subject by a man who is thoroughly familiar with the difficulties present. For a number of years I have followed his plan of continuous nasal catheter suction siphonage with increasing enthusiasm. As the points out in this editorial, there are occasional cases of adhesive, intestinal obstruction which will be relieved by the use of the nasal catheter alone. Of course, there are a number of these cases which will require either an enterostomy or a more extensive operation at a later date, but the nasal catheter offers a possible means of medical treatment for intestinal obstruction, a fact which has not been recognized until recently.

The rationale of its use rests upon this feature: "Intestinal distention engendered by a block in the bowel is due essentially to failure of absorption of swallowed air and the digestive juices, (bile, pancreatic juice, and hydrochloric acid) emptied in at the gateway of the intestinal canal. In the same manner that decompression by enterostomy of the gut obstructed by an adhesive band permits intestinal continuity to become automatically re-established, so similarly aspiration of the contents of the upper reaches of the distended intestinal tube together with

removal of increments of swallowed air and digestive juices as they accumulate, often allows spontaneous restoration of the intestinal lumen.

Of course, it is to be stressed that in the strangulation types of obstruction, whether due to hernia, volvulus, intussusception or adhesive bands, operative interference is urgent. Likewise, in the enormous distention of the colon occasionally observed in acute obstructions at the sigmoid flexure, the need for immediate decompression by operation of the balloned gut is pressing. It is remarkable how accurately one can make a diagnosis of the type of obstruction present by correlating physical findings with X-ray films of the abdomen.

Dr. Wangenstein makes a point of following the progress of the decompression in the intestine by the use of X-ray films at the bed-side. The appearance of gas in the colon in complete obstructions of the small intestine indicates that the continuity of the intestinal canal has been restored. Pain is not of importance in attempting to estimate the success of decompression. Diminution in caliber of the distended intestinal coils is of more importance than relief of pain as indicating a successful decompression.

During the time that one is using the nasal catheter suction, fluids are given in sufficient quantity to insure a urine output of 800 to 1000 c.c. daily.

According to Dr. Wangenstein, "a large number of instances of acute adhesive obstruction, whether of remote or recent origin, will be spared the necessity of operation for its relief through the use of suction applied to an intying duodenal tube.

—LeRoy D. Long.

The Present Treatment of Tetanus (Les Traitements Actuels du Tetanos). By E. L. Peyre. *La Presse Medicale*, December 9, 1933.

That tetanus is a curable disease in a large majority of cases, and that the treatment is not well systematized because the disease is infrequent, and there are reports only in connection with isolated cases, is the burden of the argument of the author.

Six personal cases are reported by the author, with recovery in five, making 83 per cent of cases cured by the plan suggested.

It is assumed that proper local treatment is employed in the average case. That is not considered in this article, emphasis being placed upon the measures used in connection with the general toxemia. This is considered under three headings: Serotherapy, sedatives and adjuvants, and phylactic agents.

Extremely large doses of antitetanic serum, given by all routes—subcutaneously, intramuscularly, intravenously, and, especially intra-spinal—is advised.

Particular attention is called to the value of sedatives, such as chloral hydrate, either by mouth or per rectum, the author stating that a tetanus patient who sleeps is half cured, ("un tetanique qui dort est un tetanique a moitié guéri"). Reference is made, also, to the use of the barbiturates in the United States, and to the common use of avertine per rectum in Germany.

The plan of DuFour in anesthetizing the patient by the use of chloroform or ether is considered as being of extreme value, not only for the purpose of producing temporary relaxation, but because it is believed that the combination of the anesthetic agent with the cellular elements of the central nervous sys-

tem makes it possible for antitetanic serum to fix the toxins in the cells. In proof of this it is related that guinea pigs injected with the toxin of tetanus after anesthesia do not develop the disease. After the guinea pig is injected with toxin, and then anesthetized, the disease develops rapidly. But if the pig is injected with toxin, followed by anesthesia, and that by antitoxin the disease is not developed. From this point of view, chloroform and ether are considered phylactic agents.

In connection with the agents already mentioned, phenol in either the aqueous solution advised by Baccelli or in oil as advised by Montille is employed.

The procedure of Couvy in the use of urotropin is also employed, it being believed, following the reports of Le Fevre de Arrie and Millet, and of Mutermilch that the meningeal barrier to the entrance of antitoxic agents is thus removed.

Incidentally, attention is called to the necessity of supplying nourishment and water by the intravenous injection of solutions of glucose.

In summing, one would gather from the article that it is the author's belief that, notwithstanding tetanus is due to the toxin produced by a specific organism, antitoxin alone will not cure the average patient, there being so many concomitant situations that require the various procedures enumerated, and employed in a very heroic manner.

—LeRoy Long.

Grave Accidents in Proctoscopy (Les Accidents Graves de La Rectoscopie). By G. Menegoux. *La Presse Medicale*, December 6, 1933.

The case of a man 43 years of age is reported. He entered hospital because of pain in the left iliac fossa. He had had diarrhea and constipation alternately and had lost much weight. He was having a little fever.

In connection with a routine examination, a proctoscopic examination was made. A few hours later the patient complained of pain and vomiting and had more fever. Seen by the author twenty hours after the proctoscopy, there was generalized pain over the entire abdomen, with rigidity. The temperature was elevated. There was a diagnosis of generalized peritonitis, cause unknown, but possibly due to perforation of the rectum, although there was no history that there had been bleeding during or after the examination.

An immediate operation was performed when it was found that the abdominal cavity was filled with pus and false membranes. At the junction of the rectum and sigmoid there was a large mass without visible perforation. It seemed impossible to do a resection. Drainage was placed and the abdomen closed. The patient died the next morning.

At autopsy it was demonstrated that there had been a rupture of a perisigmoid abscess.

Reference is made to a case reported by Feist in a German medical journal, 1926. A man of 66 complained of pain in the rectum. A digital examination was negative. A proctoscopic examination was performed with the patient in genu-pectoral position. The proctoscope, with the obturator, was introduced 12 cm. Then the obturator was removed, and the tube was passed some 8 cm. farther under control of the vision. At that moment it was discovered that a loop of the small bowel was in the rectum. There was an immediate laparotomy at which it was found that there was a rupture of the posterior rectum at

its junction with the sigmoid at the site of a pedunculated diverticulum. The walls of the diverticulum were as thin as paper. The perforation was closed by two layers of sutures. A provisional colostomy was performed. The patient recovered.

Another case is reported by Clairmont in which there was a perforation of the anterior rectum in the course of a proctoscopic examination during which insufflation by air was employed for the purpose of facilitating the progress of the proctoscope.

Particular attention is called to the danger attendant upon the employment of the proctoscope in connection with suspected inflammatory processes about the rectum or the lower sigmoid.

The author suspects that but few of the unfortunate cases of rupture due to proctoscope examination have been reported, but he has collected cases reported by Mummery, (not a personal case, but related by him), by Anschutz, by Sultan, by Schreiber, by Strauss, by Schmitt, by Gant, and two by Clairmont. Most of the patients died. Those who recovered had the advantage of exploratory operation immediately after the accident.

All the reported cases show that the perforations have been in the upper rectum which is covered by peritoneum, and the usual site is almost constant, it being at the junction of the rectum and sigmoid.

The author does not believe that proctoscopic examination ought to be undertaken in the case of a patient where it has been demonstrated that there are diverticula of the sigmoid, because in a number of the reported cases the accident was associated with the existence of diverticula in close relation with the recto-sigmoid junction. He believes that proctoscopic examination should never be done under general anesthesia.

—LeRoy Long.

Migrating Projectiles—Conditions Governing Their Penetration Into Vessels (Projectiles Migrateurs—Conditions de Penetration des Balles dans les Vaisseaux) by R. Piedelievre, Professeur agrege a la Faculte de Medicine, Paris; and Pierre Etienne-Martin, Interne des Hopitaux de Lyon, *La Presse Medicale*, November 1, 1933.

This contribution is of interest to both the surgeon and the student of legal medicine.

A case is reported where a young man was shot in the front of the chest by a revolver. Death was immediate. Autopsy showed that the wound of entrance was through right side of sternum opposite the third intercostal space. The missile cut across upper pericardium and penetrated the antero-lateral side of the arch of aorta (la crosse de l'aorte), but there was no wound of exit from aorta. The aorta was traced through thorax and abdomen, then the iliac vessels. The missile, a ball of lead 8 m.m. caliber, slightly deformed, was found in the common femoral on left side, just (two finger breaths) below Poupart's ligament, it having been arrested at the point of origin of the deep femoral.

The authors carried out some experimental work in an effort to determine the mechanics:

1. Shots from a revolver were fired into a hanging rubber tube through which water was rapidly flowing, from various distances. The result was that, when the tube was penetrated at all, there were perforations on both the anterior and posterior wall.

2. On the assumption that the relation of the

wounded vessel to adjacent unyielding tissue—for example in this particular case, the relation of aorta to more or less yielding tissue in front and with the unyielding spine behind—a heavy board was placed behind the tube containing the running water and close to it. It was found that some of the balls fired from distance under 10 meters penetrated the anterior wall, but only tore the posterior wall a little or left an imprint upon it but with a dent in the board. Where the front of the tube was covered by layers of paper, rubber, and thin board, the same result was obtained—that is, at certain distances there was no frank penetration of posterior wall, provided the unyielding board was behind the tube. In the absence of this posterior board both walls were penetrated.

The authors conclude that in case of the tube through which a stream of water is rapidly flowing, the phenomenon of non penetration of the posterior wall is due to the resistance offered by the posterior board with monetary pinching of the posterior wall of tube in an indentation made in the board. They believe that the same explanation holds when there is only a wound of entrance in a large vessel that is supported on opposite side by an unyielding structure (bone) which, by its resistance, limits the damage to arterial wall at that point.

—LeRoy Long.

CARE OF ADVANCED CARCINOMA OF THE GASTRO-INTESTINAL TRACT

Frank C. Yeomans, New York (*Journal A. M. A.*, Oct. 7, 1933), points out that, because of the fact that the great majority of patients with a malignant condition of the gastro-intestinal tract still reach the surgeon in a stage of the disease so advanced, radical excision—the most hopeful type of therapy—is impossible. From the very nature of conditions it would seem that this state will persist and that palliation will consequently continue to be the only form of treatment for patients with carcinoma of the gastro-intestinal tract, for the following reasons: (1.) In many instances the malignant process is insidious in onset and almost symptomless until far advanced, or the patient all too frequently neglects early warnings. (2.) Failure to make a thorough examination when medical advice is first sought is quite common. There are difficulties in detecting, and it is frequently impossible to detect, early malignant conditions in certain situations by available methods of diagnosis. The author states that the sympathetic attitude is important, as the victim of inoperable cancer may become a prey to the irregular practitioner or cultist. The desideratum is life in comfort while it lasts. Nourishing food of high caloric value, good hygiene and competent nursing, together with rest and sufficient sleep, obtained if necessary by sedatives, analgesics or opiates is essential. Tonics of iron and arsenic are indicated and in some cases whisky in 30 c.c. doses, transfusions of blood, cod liver oil with viosterol and once or twice weekly an ampule of calcium gluconate by vein, which, according to some clinicians, in large continued dosage is a potent analgesic. The incidence of gastro-intestinal malignant conditions in 10,070 patients admitted to the New York City Cancer Institute during a period of nine years included esophagus, 192; stomach, 622; colon, 77; sigmoid, 70; rectum, 406, and anus, 17, or 13.7 per cent of the total admissions.

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ORGANIZATION OF ANESTHESIA SERVICE OF GENERAL HOSPITAL

Albert H. Miller, Providence, R. I. (Journal A. M. A., Oct. 7, 1933), discusses the need for an anesthesia service, the instruction of interns, the personnel of the staff of anethetists, the examination of patients, the keeping of records of anesthesia, inhalation therapy and economic conditions, suggests subjects for lectures and concludes that the functions of an anesthesia service in a general hospital are to provide satisfactory anesthesia for the patients and to train the younger practitioners in the art of anesthesia. This training is requisite for recruiting the number of graduate anethetists and for familiarizing the future surgical specialists with a subject that they will constantly encounter in their daily work. A department of anesthesia cannot be conducted without expense, a factor which must be met by the patient, the surgeon or the hospital.

HEREDITARY GAUCHER'S DISEASE

J. P. Anderson, Cleveland (Journal A. M. A., Sept. 23, 1933), investigated the history of a Russian family in which there is a possibility of hereditary transmission of Gaucher's disease. He reports the clinical history of this family in the hope of stimulating a thorough study to the third generation of families in which instances of Gaucher's disease have occurred. The history of the family observed shows that Gaucher's disease has affected almost all the women and none of the men. Two of the girls are dead. In one case the diagnosis of Gaucher's disease was established with tuberculosis as an intercurrent and terminal infection. Of the two living members exhibiting the disease, one has been proved by splenic puncture to have many Gaucher cells. Liver extract administered for eight weeks to one patient with Gaucher's disease had no apparent effect in combating a steady progression of the disease, including increasing anemia. The presence of a similar condition in the maternal grandmother and two of her sisters has been reported but cannot be proved. The possibility of hereditary transmission through a male donor who himself never showed any evidence of the disease suggests that the family histories of patients with Gaucher's disease should be followed through the second and third generations.

OTORHINOLOGIC ASPECTS OF SCARLET FEVER, WITH PARTICULAR REFERENCE TO THE SINUSES

Gordon D. Hoople and Linus S. Cave, Syracuse, N. Y. (Journal A. M. A., Oct. 7, 1933), studied two series of cases of scarlet fever. The first series, of 292 cases of scarlet fever in which roentgenograms were taken, showed a suprisingly large number of patients who had roentgenologic evidence of sinusitis. It was found that there was no incidence of otitis media without the presence of sinusitis. This finding was further qualified by the observation that in every case of otitis media there was some involvement of the sinuses on the side of the lesion of the ear. In this first group the patients had been selected primarily for the roentgen study, and the study was continued for a period of more than a year to observe any seasonal variation that might be present. None having been found, save for the seasonal incidence of scarlet fever itself, the second study was begun immediately, and a group of eighty patients was observed. Twelve of the eighty patients showed a clear roentgenogram at or near the onset of their illness, five of whom showed involvement of the sinuses at a subsequent time, leaving but seven who showed clear sinuses throughout their illness. Thus 91 per cent of the patients gave roentgen evidence of sinusitis, which corresponds closely with the percentage in the first group. The clinical examination failed to support this evidence in every case. There were thirty-three cases of otitis media among 292 patients in the first group, and twelve in the second series of eighty patients. In all of these there was roentgen evidence of sinusitis, and in all but one there was involvement on the side of the infected ear. The authors, without desiring to draw unwarranted conclusions in the absence of control studies, raise the question as to whether or not sinus involvement is the rule rather than a complication.

DISEASE OF THE UPPER RESPIRATORY TRACT: PROBLEMS CONNECTED WITH THE ETIOLOGY AND PROPHYLAXIS

A. R. Dochez, Katharine C. Mills and Yale Kneeland, Jr., New York (Journal A. M. A., Nov. 4, 1933), state that there is some relationship between the common cold and weather conditions; that weather was long thought to be of primary importance is indicated by the name of the disease itself. There is no question now that the malady is primarily an infectious one and that the effect of weather is secondary. By use of the plate method of bacteriologic study, it has been possible to isolate a large number of different micro-organisms from the upper respiratory tract, and as one or another of these has happened to be prominent in a given outbreak of colds, etiologic significance was naturally attributed to them. In 1892, Pfeiffer announced the isolation of the bacillus now known as *Haemophilus influenzae*. During the pandemic of 1889 and for many years thereafter this organism was generally regarded as the cause of influenza. In 1918, however, when the world was revisited by influenza, a vigorous controversy sprang up as to the exact part this organism played. A systematic revaluation of the relationship of Pfeiffer's bacillus to influenza has not been possible since that time. On the other hand, valuable data have been accumulated dealing with the bacteriology of colds. In the past ten years several careful studies by Pfeiffer of groups of persons, not only when suffering from colds, but at regular intervals throughout the entire year, have shown that there is a "basal flora"

of the upper respiratory tract composed not only of the organisms generally thought to be nonpathogenic but also, for longer or shorter periods, of organisms that are known to be highly pathogenic, such as hemolytic streptococcus, pneumococcus, and *H. influenzae*. The presence of such organisms is by no means necessarily associated with symptoms of infection of the upper respiratory tract; they may not increase in number or incidence with the onset of an acute cold, and the only certain relationship that can be established between them and respiratory infection is their activity in the secondary inflammatory process of the upper respiratory tract. Similar surveys (made by Mills, Shibley and Dochez) dealing with the presence of the gram-negative filter-passing anaerobes in persons throughout the year have shown that no causative part can be ascribed them in connection with the common cold. Consideration of these results has now led most investigators to believe that the cause of the common cold lies elsewhere than in the visible bacteria that can be cultivated from the upper respiratory tract. Kneeland and Dawes have shown that the upper respiratory tract of the infant is sterile at birth, but during the first months of life a basal flora is acquired entirely comparable to that of adults, and the first appearance of pathogenic organisms does not necessarily usher in disease. Observations on chimpanzees following inoculation of bacteria-free filtrates from colds showed that there was a springing into prominence of pathogenic bacteria previously inconspicuous in the noses and throats of the animals. Many repetitions of these transmission experiments, and many negative controls with material derived from normal persons, are convincing evidence that there is present in the upper respiratory tract in cases of acute colds a filtrable virus that can give rise to a typical cold when inoculated into human volunteers or anthropoid apes. In regard to influenza, it seems logical to inquire whether or not a filtrable virus may be the cause. A filtrable agent has recently been cultivated in tissue medium from human cases of influenza in two separate outbreaks of the interpandemic form of the disease by Long, Bliss and Carpenter. The importance of the relationship of *H. influenzae* to human influenza has not yet been satisfactorily determined. For many years, efforts have been made to mitigate the severity and cut down the number of these infections by employing vaccine composed of the visible pathogenic organisms of the respiratory tract. In view of the fact that many of these organisms are now believed to be secondary in their activity, the disappointment that has come from the use of such vaccine was to be expected. The authors believed that the incidence and course of the secondary bacterial complications of the common cold could be favorably influenced by employing a vaccine comprised of the organisms concerned. They selected a simple antigenic mixture consisting of heat-killed cultures of pneumococcus, *H. influenzae* and *Streptococcus haemolyticus* for purposes of vaccination. This vaccine was given at weekly intervals (nine injections in the autumn followed by a similar number in February and March). A careful analysis of the clinical phenomena observed in the vaccinated group indicates that there was no reduction in the number of simple colds or of respiratory infections associated with fever in the vaccinated as compared with the nonvaccinated groups. There was, however, an apparent reduction in the severity of infections in the vaccinated infants as judged by the average duration of the febrile period. This was shorter by 40 per cent in the vaccinated as compared with the unvaccinated group. There were five instances of pneumonia among the nonvaccinated and only one among the vaccinated. The authors conclude that a consid-

eration of the results obtained up to the present leads one to ask whether any clues exist that may be followed with any hope of success in solving the problem of colds and influenza. The knowledge that they are primarily infectious due to agents belonging to the group of filtrable viruses and that in some instances the etiology may be complicated by the presence of one or more of the well known pathogenic bacteria should so clarify the understanding of them that henceforward more rational methods of control may be undertaken.

TRAUMATIC EPITHELIAL CYSTS OF THE SKIN

Max S. Wien and Marcus R. Caro, Chicago (Journal A. M. A., Jan. 20, 1934), direct attention to traumatic epithelial cysts of the skin which have been previously reported under various titles. They report three such cases with histologic examination in two. Traumatic epithelial cysts develop as a result of injury to the skin, usually produced by a blunt or tearing instrument. Such cysts occur most often on exposed sites, such as the fingers and palms, and are especially prevalent in those occupations which predispose to injury. The origin of the cyst is most probably from a bit of epidermis which has been torn from the surface and implanted in the corium. It may also originate from deeper epithelial structures in the absence of surface injury. Here the cyst may form about a foreign body by proliferation of epithelium from the hair follicles or the glandular structures of the skin. Occasionally a foreign body granuloma with cyst formation may simulate an epithelial cyst of traumatic origin.



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VOLUME XXVII

McALESTER, OKLAHOMA, MARCH, 1934.

NUMBER 3

THE TREATMENT OF DIABETES MELLITUS AND ITS COM- PLICATIONS*

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Six years ago at the New Orleans Congress of the American College of Physicians and in a recent article, Allen¹ called attention to the increasing death rate from diabetes, even though with insulin and proper dieting deaths from uncomplicated diabetes should be of rare occurrence. Joslin² has also discussed the rising mortality rates from diabetes and has stressed the duty of physicians in its prevention. A recent study by Hoffman³ shows that the death rate from diabetes continues to increase, "regardless of the insulin treatment and other advances in medicine."

Hoffman's statistics derived from a study of the diabetes mortality rate in 50 cities in the United States show that the diabetes death rate increased from 15.9 in 1912, to 24.6 in 1931, per 100,000 of population. The total number of deaths from diabetes in these 50 American cities, with a population of 21,244,714 in 1912, was 3,373; while in the same cities, with a total population of 30,987,422 in 1931, the number of deaths was 7,610. The death rates from diabetes in the three largest American cities are inordinately high, i.e., Chicago 27.4, New York City 27.1 and Philadelphia 20.7 per 100,000 of population.

No death rates from diabetes in the rural districts have been published; but it is hoped that when the mortuary statistics of the 1930 census appears, valuable data regarding the distribution and death rates from diabetes in the various sections of the country may be available. It is believed that there are fewer cases of diabetes in proportion to population in the country than in the cities, but it may be

assumed that the diabetes death rates in rural communities are relatively as high as in the cities.

Many causes for the increase in the death rates from diabetes have been suggested. An actual increase in diabetes is thought by some to account for the higher mortality rates from the disease; but probably the most important factor is that, with the feeling of safety which the use of insulin has engendered, diabetics have become more careless in following their diets. The diabetic death rate has not increased, but on the contrary deaths from uncomplicated diabetes have been practically eliminated, in hospitals where the treatment has been directed by clinicians like Joslin, Allen, Wilder, Woodyatt and many others; and even in the neglected cases, with coma and gangrene, in the hands of experienced diabetic clinicians deaths are exceedingly rare. Considering these facts one cannot escape the conclusion that an important factor in the increasing death rate from diabetes is the inadequate treatment of the disease by diet and the use of insulin. Allen¹, in discussing inadequate treatment in diabetes, goes to the heart of the problem when he says:

"Since the present treatment, if correctly carried out, is theoretically capable of enabling nearly all diabetics to live out their natural lifetime, the failure to accomplish anything resembling this ideal must be attributed to two conditions: First, large numbers of physicians are evidently attempting to take advantage of the opportunity to use insulin for obtaining superficial and transitory benefits, without being qualified to maintain such control of the diabetes as will guard the patient against danger. Second, large numbers of patients are still too careless to follow treatment faithfully, even when they have been correctly advised by a physician."

THE DUTY OF THE GENERAL PRACTITIONER TO HIS DIABETIC PATIENT

The treatment of diabetes is so simple that children of ten and twelve years of age learn to weigh and measure their food, calculate their own menu in grams and calories, analyze their urine and administer insulin to themselves when needed.

*Read by invitation before the Oklahoma State Medical Association, Oklahoma City, Oklahoma, May 18, 1933.

There is no excuse, therefore, for the general practitioner, who must necessarily treat most cases of diabetes, not being able to direct the diabetic's diet and insulin therapy. But does the general practitioner who sees but one or two diabetics a year have the incentive to master the dietary management of the diabetes? If the physician is prepared to direct the treatment of diabetes, does he have the time, or can he have the time, to teach his diabetic patient the principles of nutrition and the use of insulin when necessary?

Judging from the statistics quoted by Hoffman it appears that even though there are medical centers in the large cities, and many clinicians in private practice who are adequately prepared to treat diabetes and whose death rates in diabetes must be very low—almost nil from uncomplicated diabetes—the average city general practitioner either does not treat diabetics properly, or there are many diabetics who have no treatment, or who do not follow the diets given them by physicians qualified to treat diabetes. The ignorant, the self indulgent and the poverty stricken diabetics usually are doomed to early death; and no doubt a considerable number of cases of diabetes belong to those classes, but there is no reason to think that there is more ignorance, perverseness and poverty in 1929, the year of our greatest prosperity, than in 1912. Certainly there is little hope of diminishing the death rates among those who cannot, or will not learn the simple principles of nutrition needed to control diabetes; but the well directed efforts of physicians, by impressing the diabetic with the necessity of his learning how to live and have diabetes, may save many who are now sacrificed on the altars of ignorance and self indulgence.

In the treatment of diabetes, as in every disease, only what is best for the patient should be considered; and the conscientious physician must decide for himself whether or not he is prepared to teach his trusting diabetic client how to calculate food values in grams, and calories, and whether or not he understands how to adjust the insulin dosage and diet to fit the patient's individual needs. The physician treating diabetes must give adequate time to educate the patient if he hopes to get results.

The best diabetic clinician is the best teacher, but "a little learning is a dangerous thing" for the diabetic and for the

physician who treats the disease. As has been said before, there is no reason why any general practitioner should not become adequately prepared to treat diabetes, but if he is not, obviously it is his duty to refer his patient with diabetes to some one who has had the training and experience necessary to deal with such cases. The growing diabetic death rate is a reflection on the medical profession.

THE ADVANTAGES OF A BRIEF PERIOD OF HOSPITALIZATION IN TREATING DIABETES

No one doubts but that the patient with tuberculosis stands the best chance to get well if he can have the educational advantages of even a short stay in a tuberculosis hospital; and so the diabetic will be more apt to learn how to manage his case if he can have hospital care under a clinician who has had a larger experience in teaching diabetics than the general practitioner who sees only an occasional case. The tuberculosis hospital has played a considerable part in the reduction of the death rate of the "white plague," both by curing, or arresting the disease in the tuberculous patients; and each patient with tuberculosis who has had hospital treatment, goes home and teaches others how to prevent the disease. Likewise the death rate in diabetes may be lowered when physicians consider it their duty to send their diabetics for a stay in a hospital long enough to learn the simple principles of nutrition necessary to control diabetes.

The diabetic who has had hospitalization goes home and he teaches the other members of his family the dangers from over-eating, which no doubt is one of the most important causes of diabetes. The diabetic who knows diabetic arithmetic always takes delight in teaching other diabetics what he knows about diet and nutrition. While the diabetic should be taught that he can help other diabetics in working out their diets he should be shown that he is not prepared to treat diabetes except with the cooperation of a physician.

Allen⁶ urges hospitalization in the treatment of diabetes for the following very good reasons:

"The most effective way of beginning diabetic treatment is by spending several weeks in a suitably equipped hospital or other institution. Even in cases where the sugar might be cleared up by home treatment, the results are far more thorough and lasting by the institutional method. This fact is easily understood by reason of the more complete study of

the case and especially the more efficient training of the patient possible in an institution. As every patient faces the necessity of taking care of his life, it is sufficiently important that he should be willing to devote a few short weeks to the best preparation for this task. The importance of this initial institutional care is still greater in cases treated with insulin than in those treated with diet alone."

Of course, there are many diabetics, particularly during the present depression who have not the money to go to hospitals for even a few days, though they can get ward rates, and many have not the money to pay physicians fees; and since the diabetic diet, which consists largely of vegetables, fruit, cream, and meats, is expensive many poverty stricken diabetics must suffer and some of them die. If the patient can procure enough money to pay for a few days in a hospital, and is not able to pay physicians' fees, the clinicians on the staffs of hospitals are always glad to give their services to indigent patients; and likewise the general practitioners are ready to treat any worthy diabetic who is not able to pay for his services. It is a difficult situation, however, for the indigent in the year 1933, and one would expect an increase in the diabetic death rate; but that may be offset by the fact that many diabetics cannot get the food to overeat and consequently there will be fewer deaths from the diabetic's "sins of commission."

While making investigations regarding food conditions in Germany after the signing of the armistice in 1918, I was informed by German physicians that the incidence of, and the death rates from diabetes, was greatly reduced in Germany after the first year of the World war when the allied blockade became so effective that the whole German population suffered for lack of food. Perhaps one of the compensations for the distressing times through which we are passing will be a decrease in diabetes because of the enforced temperance in eating by a large part of our population.

THE TREATMENT OF UNCOMPLICATED DIABETES

In former articles, we have endeavored to simplify the treatment of diabetes so that it could be carried out by the general practitioner of limited experience with the disease; and we have been gratified to learn from physicians that they have managed their diabetics successfully by follow-

ing the suggestions laid down in those articles.^{8 9 10}

We have found from experience that it is practicable in beginning the treatment of the uncomplicated cases of diabetes in adults to use one diet with which to test the patient's carbohydrate tolerance. This diet consisting of 60 grams of carbohydrates, 60 grams of proteins and 60 grams of fats a day. This diet may be added to, until daily menus have been worked out which will provide sufficient food for the diabetic to eat to satiety, maintain his normal weight, and "carry on" with ease and efficiency the duties of his vocation.

Of course, it is best to treat diabetes scientifically, but since that is not always possible, we have followed the rule which was learned during ten years of general practice; i. e., that where the physician cannot do what is best for his patient, then do the next best thing, and above all things, apply common sense in the management of disease. If the diabetic must be treated at home, even if he is intelligent enough to learn food values, in beginning his treatment usually it is best not to confuse him by discussing grams and calories, but to prescribe a diet selected largely from food that is prepared for the rest of the family.

It is important in the very beginning of treatment to impress upon the patient that it is not difficult to prepare the food for a diabetic, nor is it a hardship to live on such a diet, because he can have plenty to eat of a variety of foods, and if he will adhere to his diet diabetes will not shorten his life or interfere with his usefulness or happiness. The fact is that the careful diabetic will live longer than other members of his family who have not been taught to live on a low carbohydrate, well balanced diet.

Some of the most brilliant results that we have seen in the treatment of diabetes have been among very poor patients who could scarcely read, or write, but who possessed what many educated people lack, i. e., common sense, and the will to do right. They were placed on diets, containing given quantities of simple foods expressed in household terms, which they carried out in their homes. They were not confused with trying to work with the metric system, and they were not given the fancy patented diabetic foods that are expensive and often misleading in their carbohydrate content. They were taught

simple and practical methods of how to live at home and have diabetes.

COOPERATION OF PATIENT NECESSARY

If the diabetic is among the 30 or 40 per cent who will have to use insulin, he should be taught that it is even more necessary for him to adhere to his diet than if he had a mild case of diabetes. Above all things the diabetic should be made to realize the seriousness of his disease, and be impressed with the fact that if he is not willing to follow the diet prescribed by his physicians, and remain under his care, even after he has learned the arithmetic and chemistry of diabetes, he surely will suffer the consequences of his diabetic sins. The paths of the careless, self-satisfied and self-indulgent diabetics, who sometimes think they know more than their physicians, like "the paths of glory lead but to the grave." In order to secure the full cooperation of the diabetic while keeping him under observation until his optimal diet can be worked out it is necessary to explain to him that the only method of finding out the amount of food he can take and keep his urine sugar free is by trying out a test diet, increasing the food, and using insulin if necessary, until the diet suited to his particular nutritional needs has been determined.

One of the difficult problems with most diabetics is to convince them that they not only can live, but that they must live on less bread than they have been eating, because they believe that "bread is the staff of life." Paraphrasing an old aphorism, "what is one man's bread is another man's poison," makes good "food for thought" for the diabetic, because he can poison himself very easily by eating more bread than he can metabolize.

The diabetic's meat must be restricted. It should be explained to him that 58 per cent of protein is converted into sugar and metabolized as such in the body; and if he eats a large amount of meat his urine will soon be loaded with sugar. We have had many diabetics who had been living largely on meats and who were growing worse rapidly because they thought they could eat unlimited quantities of beef, pork, fish or fowl.

While cream and butter should play a large part in the diabetic's diet, whole milk or buttermilk should be used cautiously, because it must be remembered that about 5 per cent of milk is milk sugar. We have had many diabetics who have

tried the "buttermilk treatment," sometimes with disastrous results. It is true that an occasional mild diabetic will clear his urine of sugar by drinking three glasses of buttermilk a day, but that is a starvation diet if long continued; but when the diabetic drinks all the buttermilk he wants the sugar returns in his urine. Diabetics, however, need milk; and enough to nourish them properly should be prescribed, even if insulin has to be used to metabolize the carbohydrate content of the milk.

It also should be remembered that the use of a high fat diet because of its cholestral content may lead to arteriosclerosis, the most frequent and the most dangerous sequel, or complication of diabetes. Formerly eggs were given *ad libitum* in diabetes. Now one egg a day is considered as sufficient in the diet of a diabetic. Because of their high cholestral content the excessive use of eggs in the diabetic's diet may lead to the early development of arteriosclerosis.

THE DIABETIC'S INSANE DESIRE FOR SWEETS

Diabetics also must learn to forget the sweet taste; and for that reason, we agree with Joslin that it is best not to give them saccharin.

One of our diabetics, a lovely lady of fifty years of age, had no control over her appetite and was caught stealing food from other patients' trays. She defined diabetes as "an insane desire for food." Though every possible appeal was made to her to give up sweets, including the effort to frighten her by telling her of the certain death that would come to her if she persisted in her folly, she would sometimes eat a pound of candy at a time. We sent this patient home because we could not control her about eating. We next heard of her being treated (?) by a chiropractor, who advertised in the newspapers that he could "cure diabetes without dieting the patient." It is needless to add that in a few weeks she had "dug her grave with her sweet tooth."

The opinion that diabetics may eat honey seems to be wide-spread among laymen, and we have had many diabetics who had been satisfying their longing for sweets by eating honey. It is true that honey is more wholesome for the normal person, than white sugar, but honey has a very high carbohydrate content and there-

fore is just as bad for the diabetic as any other form of sweet.

Coffee and tea should be eliminated from the diabetic's diet for several reasons, the most important being that they contain a habit forming drug, caffeine, which is a diuretic and the diabetic's kidneys do not need a stimulant. Besides there are few diabetics who will not slip one or two teaspoonsful of sugar in their coffee or tea.

TRIAL DIETS

In the effort to simplify the treatment of diabetes for the general practitioner we have prepared a series of diets estimating the quantities of foods in household measures and in grams and calories.* If the patient cannot go to the hospital and the treatment must be undertaken at home, he is given the prescribed diet expressed in household measures for one or two days. As soon as he can buy gram scales and has learned how to use them his diet is prescribed in grams with the menus worked out for him. Then he is taught how to calculate food values and to prepare his own menus from foods available in his home. If the diabetic is in a hospital the dietitian can aid very materially in teaching him the simple diabetic arithmetic needed to calculate his daily menus in grams and calories. If the diabetic is to be treated at home the physician should arrange to give him daily lessons of from one-half to one hour each until his pupil patient has learned what he needs to know in order to calculate his own menus, an-

*I am indebted to Miss Bertha Sexton, Dietitian, Birmingham Baptist Hospital, for her aid in preparing and calculating the food values in the menus published in this paper.

alyze his own urine, and use insulin if necessary. In the meantime the physician can adjust the diabetic's diet, and insulin dosage if necessary, to fit his individual needs.

Treatment is begun with the trial diet number one (60 Ch. 60 P. 60 F.), if the adult patient has uncomplicated diabetes, and he has no diacetic acid in his urine. On this diet the mild diabetic usually will be sugar free in one or two days, when the diet is increased to trial diet number two (90 Ch. 60 P. and 90 F.). If in another one or two days his urine is sugar free the third trial diet (120 Ch. 60 P. and 120 F.) is given; and if in one or two days his urine continues sugar free trial diet number four (135 Ch. 60 P. and 120 F.) is given. If in another twenty-four hours he is sugar free his carbohydrates are increased to 200 grams and his fats continued reduced to 90 grams while his protein daily ration is kept at about 1 gram per kilo of body weight. This will give about 2000 calories, which is about the maintenance or optimal diet for the average adult diabetic.

Some clinicians prefer to start with the maintenance diet and increase the insulin from day to day until the urine becomes sugar free and the blood sugar becomes normal; but in our experience most patients do not want to use insulin and if the diabetic's urine becomes sugar free on one or two days he is encouraged and becomes more cooperative. If with the increase in diet sugar reappears in his urine the diabetic is shown that insulin is necessary if he would have enough food to be comfortable. He then usually offers no objection to using insulin.

TRIAL DIET NO. I

60 grams carbohydrate, 60 grams protein, 60 grams fat.

AMOUNT			FOOD	FOOD VALUE			
Gms.	Oz.	Table- spoons	BREAKFAST	Ch.	Prot.	Fat	Cals.
100	3 1/8		Grapefruit 100 grams or 1/2 orange, 1 medium (50 grams) peach or 1/2 pear or other 10 per cent fruit.....	6	0	0	24
50	2	3	Oatmeal, cooked, or any dry cereals (20 grams).....	6	2	0	32
30	1	2	Cream, 20 per cent.....	1	1	6	62
		1	Egg	0	6	6	78
10		2 strips	Bacon	0	2	7	71
150	5	1 glass	Skimmed milk or buttermilk.....	6	6	2	66
				19	17	21	333
DINNER							
100	3 1/8	7	Soup, 1 bowl chicken, or beef broth, or bouillon, or strained vegetable soup.....	0	0	0	
50	2	2x4x1"	Meat as steak 50 gms., or lamb 55 gms., or pork or				

100	3 1/4	5	fish 60 gms., or 60 gms. chicken or game.....	0	12	10	138
			5 per cent vegetables as turnip greens; or spinach; or cabbage; or cauliflower; or string beans; asparagus tips, or other 5 per cent vegetables	6	1	0	28
10		1 thin slice	Whole wheat toast, or 10 grams white bread, or 10 grams corn bread, or 10 grams crackers	5	0	0	20
100	3 1/4	1 glass	Milk	5	3	4	68
10	1/2	1 pat	Butter	0	0	6	54
50	2	1	Dessert: 50 gms. baked apple, or 75 gms. peaches, or 50 gms. pears, or 75 gms. strawberries, or 50 gms. orange or 70 gms. grapefruit	6	1	0	28
				22	17	20	336

SUPPER

100	3 1/4	7	Soup, 1 bowl as broth, bouillon, or strained vegetable soup	0	0	0	
50	2	2x4x1"	Meat substitute—American cheese or 50 gms. Swiss cheese or 50 gms. cottage cheese	1	12	15	183
50	2	3	Lima beans, 25 gms. English peas, 25 gms. navy beans... ..	5	2	0	48
100	3 1/4	Med. serv.	5 per cent vegetables, 1 small tomato, 1/2 head lettuce, or 100 gms. (5 tablespoonsful) cabbage, cole slaw (100 gms.), or radishes or any 5 per cent vegetable.....	3	1	0	16
100	3 1/4	1 glass	Buttermilk	4	4	1	41
50	2	Small serv.	Fruit as 25 gms. baked apple, 50 gms. grapefruit, 25 gms. orange, 50 gms. blackberries, 25 gms. raspberries, or any other fruit	4	0	0	16
10			Crackers	5	0	0	
6			Butter	0	0	4	
				22	19	20	304
Actual food intake for the 24 hours				63	53	61	973

TRIAL DIET NO. II

90 grams carbohydrate, 60 grams protein, 90 grams fat.

AMOUNT			FOOD	FOOD VALUE			
Gms.	Oz.	Table- spoons		Ch.	Prot.	Fat	Cals.
			BREAKFAST				
100	3		Grapefruit, 80 gms., 1 medium orange (50 gms.) 1/2 small apple (50 gms.) or other 10 per cent fruit.....	6	0	0	24
50	2	3	Oatmeal; or 20 grams dry cereal	6	2	0	32
30		2	Cream—20 per cent	1	1	6	62
10		1	Egg	0	6	6	78
10		2 strips	Bacon	0	2	7	71
150	5	1 glass	Skimmed milk or buttermilk	6	6	2	66
20		1 slice	Whole wheat toast or 20 grams white bread	10	2	0	48
10	1/4	1 pat	Butter	0	0	9	81
				29	19	30	462

DINNER

100	3 1/4	7	Soup, 1 bowl, as broth or strained vegetable soup or bouillon	0	0	0	
50		2x4x1"	Meat as 50 gms. steak, 55 gms. lamb, 60 gms. pork, 60 gms. fish, 55 gms. chicken	0	12	10	138
20	2/3	2 pats	Butter	0	0	16	144
100	3 1/4	5	5 per cent vegetables as turnip greens, or spinach, or cabbage, or cauliflower, or string beans, or asparagus tips, or any 5 per cent vegetable	6	1	0	28
50	2	5	Carrots, squash, or English peas, or beets, or turnips or any 10 per cent vegetable	6	2	0	32
15		1/2 slice	Whole wheat toast, or 15 gms. crackers or 15 gms. white bread	7	0	0	28
150	5	1 glass	Skimmed milk or buttermilk	6	6	2	72
50	3 1/4	Med. serv.	Dessert as 50 gms. baked apple, or 75 gms. peaches, or 75 gms. strawberries, or 50 gms. orange or 90 gms. grapefruit	6	1	0	28
				31	22	28	470

SUPPER

100	3½	7	Soup, 1 bowl, as clear broth, bouillon, strained vegetable soup	0	0	0	
50	2	2x4x1"	Meat substitute as 40 gms. American cheese, or Swiss cheese, or 50 gms. cottage cheese	0	12	12	138
100	3½	5	Vegetables as 40 gms. lima beans, 100 gms. English peas, 50 gms. Navy beans, 100 gms. parsnips	10	2	0	48
100	3½		5 per cent vegetables, 1 medium tomato, ½ head lettuce, cabbage, (cole slaw) 100 gms. radish 100 gms. or any 5 per cent vegetable	3	1	0	16
20		1 slice	Whole wheat toast, or 20 gms. white bread	10	2	0	48
150	5	1 glass	Buttermilk	4	4	1	41
20		2 pats	Butter	0	0	17	153
50	2		Fruit as 25 gms. baked apple, 50 gms. grapefruit, 25 gms. orange, 50 gms. blackberries, 25 gms. raspberries or any other fruit	3	0	0	12
				30	21	30	471
Actual food intake for the 24 hours				89	60	90	1403

TRIAL DIET NO. III

120 grams carbohydrate, 60 grams protein, 120 grams fat.

AMOUNT			FOOD	FOOD VALUE			
Gms.	Oz.	Table- spoons	BREAKFAST	Ch.	Prot.	Fat	Cals.
100	2		Grapefruit, 1 medium orange (60 gms.) 1 small apple (70 gms.)	8	1	0	36
100	3½	6	Oatmeal	12	1	0	52
50	2½	5	Cream—20 per cent	2	2	11	115
		1	Egg	0	6	6	78
10		2 strips	Bacon	0	2	7	71
150	5	1 glass	Milk (Sweet)	8	4	6	192
10			Butter	0	0	9	81
20		1 slice	Toast, whole wheat or white bread	10	2	0	48
				40	18	39	583

DINNER

100	3½	7	Soup—1 bowl clear broth, or strained vegetable soup, or bouillon	0	0	0	
50		2x4x1"	Meat as 50 gms. steak, 55 gms. lamb, 60 gms. pork, 60 gms. fish, 55 gms. chicken	0	12	10	138
100	3½	5	5 per cent vegetables as turnip greens, spinach, cabbage, cauliflower, string beans, asparagus, or any 5 per cent vegetables	6	1	0	28
50	3½	5	10 per cent vegetables as carrots, squash, English peas, beets, turnips, butter beans, or any 10 per cent vegetables	6	2	0	32
20		1 slice	Whole wheat toast	10	2	0	48
150	5	1 glass	Milk (Sweet)	8	4	6	102
30		3 pats	Butter	0	0	25	225
50			Dessert, as 50 gms. apple, 100 gms. peaches, 80 gms. pears, 100 gms. strawberries, 70 gms. orange, 125 gms. grapefruit	9	1	0	40
				39	22	41	613

SUPPER

100	3½	7	Soup, as clear broth, bouillon, or strained vegetable soup	0	0	0	
50	2	2x4x1"	Meat substitute, American cheese, or Swiss cheese, 50 gms. Cottage cheese, 50 gms. any other cheese	0	12	12	156
100	3½	5	Lima beans, 50 gms. English peas, 100 gms. Navy beans, 50 gms. parsnips, 100 gms. or any 20 per cent vegetables	10	2	0	48
100			3 to 5 per cent vegetables as tomatoes, ½ head lettuce, cabbage, (cole slaw) 100 gms., radishes 100 gms., celery or any 5 per cent vegetable	3	1	0	16

15			Mayonnaise, 1 teaspoonful	0	0	15	135
20		1 slice	Whole wheat toast	10	2	0	43
150	5	1 glass	Milk (Sweet)	8	4	6	102
8		1 pat	Butter	0	0	6	54
70			Dessert: As 70 gms. apple, 100 gms. peaches, 80 gms. orange, 125 gms. grapefruit, 35 gms. raspberries, 70 gms. blackberries	9	1	0	40
				40	22	39	599
			Actual food intake for the 24 hours	119	62	119	1795

TRIAL DIET NO. IV

135 grams carbohydrate, 60 grams protein, 120 grams fat.

AMOUNT			FOOD	FOOD VALUE			
Gms.	Oz.	Table- spoons	BREAKFAST	Ch.	Prot.	Fat	Cals.
100	3½		1 medium size orange, 1 medium size apple, or 50 gms. banana	12	1	0	52
100	3½	6	Oatmeal	12	3	0	42
60	2	4	Cream—20 per cent	2	2	11	115
		1	Egg	0	6	6	78
10		2 strips	Bacon	0	2	7	71
150	5	1 glass	Milk (Sweet)	8	4	6	102
10		1 pat	Butter	0	0	9	81
20		1 slice	Whole wheat toast or white bread	10	2	0	48
				44	20	39	589
DINNER							
100	3½		Soup, 1 bowl of clear broth, or strained vegetable soup, or bouillon	0	0	0	
50		2x4x1"	Meat as 50 gms. steak, 50 gms. lamb, 60 gms. pork, 60 gms. fish, 55 gms. chicken	0	12	10	162
100	3½	5	5 per cent vegetables as turnip greens, spinach, cabbage, cauliflower, string beans, asparagus, or any 5 per cent vegetables	6	1	0	28
50	3½	5	10 per cent vegetables, carrots, squash, English peas, beets, turnips, butterbeans or any 10 per cent vegetables	6	2	0	32
10		1 slice	Whole wheat toast	10	0	0	20
150	5	1 glass	Milk (Sweet)	8	4	6	102
30		3 pats	Butter	0	0	25	225
100			Dessert: Large serving pears, 100 gms., strawberries, 200 gms., apples, 100 gms., or peaches 125 gms., 1½ orange, 100 gms., or 1 medium grapefruit	12	1	0	52
				42	20	41	621
SUPPER							
100	3½		Soup as clear broth, bouillon, or strained vegetable soup	0	0	0	
50		2x4x1"	Meat substitute as American cheese, or 50 gms. Swiss cheese, 50 gms. Cottage cheese, 50 gms. Dutch, 50 gms. Limberger or any other cheese	0	12	12	183
100	3½	5	Vegetables as 50 gms. lima beans, 100 gms. English peas, 50 gms. Navy beans, or other lentil	10	2	0	48
100			5 per cent vegetables as 1 medium tomato, ½ head lettuce, cabbage (cole slaw), 100 gms. radishes, 100 gms., celery or any 5 per cent vegetable	3	1	0	16
15			Mayonnaise	0	0	15	135
25		1 slice	Whole wheat toast	12	2	0	56
150	5	1 glass	Sweet milk	8	4	6	102
		1 pat	Butter	0	0	6	54
100			Dessert: Pear, 100 gms., strawberries, 200 gms., apple 100 gms., or peach, 125 gms., or orange (100 gms.)	12	1	0	52
				45	22	39	646
			Actual food intake for the 24 hours	131	62	119	1856

Reducing the Fat Diabetic. If the diabetic is overweight and does not lose on the trial optimal diet, the cream and butter should be reduced, or omitted altogether, until he is losing from two to four pounds per week. He is kept on this diet until he has been reduced to about ten pounds below his normal weight, and then the cream and butter are added until the diet is found upon which the patient can hold his weight to about ten pounds below his standard weight.

The Underweight Diabetic. If the underweight diabetic's urine remains sugar free on the trial diet plus two or three raises and he is not gaining one or two pounds a week, two to four teaspoonsful of cream and an extra pat of butter are added to each meal until the patient gains up to within ten pounds of his normal weight.

Of course, the urine of the patient on a high fat diet is watched for the presence of diacetic acid and if that occurs the cream and butter are reduced; or the patient is given a slice of bread and enough insulin to keep his urine sugar free. It should be remembered that "fats burn in the fire of the carbohydrates" and sufficient starches, or fruit sugars are necessary for the complete metabolism of fats.

Instruction for the Educated, Intelligent Diabetic. If the patient can buy the gram scales and is sufficiently intelligent to apply the metric system in weighing and measuring his food, he may be treated at home, provided his physician has had the opportunity of learning diabetic arithmetic and he understands fully how to adjust the insulin dosage. The diabetic manuals by Joslin, John or Duffie may be used with advantage in teaching the intelligent diabetic how to live at home.

The greatest joy that can come to a clinician who treats diabetes is to deal with an intelligent diabetic who can learn the simple principles of nutrition, and who possesses the self control required to live within his carbohydrate limitations. The clinician can promise such a person that he can control his diabetes almost as certainly as two and two make four. Indeed, in no other disease within the whole realm of medicine has the treatment been placed on such an accurate scientific basis.

In treating diabetes the physician must become the serious and interested instructor who can take the time to teach the dia-

betic the general principles of nutrition, with particular reference to making menus containing the amounts of carbohydrates, proteins and fats needed in his particular case. Nevertheless, the diabetic should be made to understand that while he can learn to diet himself, use insulin and examine his urine for sugar and diacetic acid, he is not qualified to treat himself, or anyone else with diabetes. The old French aphorism, "The doctor who treats himself has a fool for a doctor and a fool for a patient," is particularly applicable to the diabetic who thinks that he can dispense with the services of his physician. He has the "little knowledge that is a dangerous thing," and he should understand that while he is not sick in bed, he needs the care of a physician to keep him well, and he should report to his physician as often as may be necessary to prevent the complications of diabetes.

EXAMINING THE URINE AT HOME

One of the first lessons that the diabetic should learn, whether he is treated at home or in a hospital, is how to examine his own urine for sugar and diacetic acid. One or two test tubes, a few ounces of Benedict's qualitative solution, a small bottle of ferric chloride, and a medicine dropper will not cost the patient over a dollar; and that is all he needs to keep informed as to whether or not he is eating too much glucose-forming food, and also as to whether or not he is metabolizing his fats.

To test the urine for sugar add eight drops of urine to a teaspoonful and a half of the Benedict's solution in a test tube, shake and boil over an alcohol lamp, or Bunson gas burner, or in a cupful of boiling water on the kitchen stove, and let it simmer for five minutes. If a heavy greenish precipitate forms it means a trace of sugar, if a yellowish sediment is found a moderate amount of sugar is present, and if the precipitate is red it shows that the urine is heavy with sugar.

For several weeks after beginning the treatment the patient or some member of his family should examine two or three specimens a day until he learns the diet he can follow and keep his urine sugar free; and he should examine his urine frequently as long as he lives. If the diabetic is tempted to eat sweets, or too much bread or other starchy foods, or if he eats too much meat; then when he examines his urine and finds it loaded with sugar, he

will not be so apt to disregard his instructions and repeat his indiscretion in eating.

Test for Diacetic Acid. The test for diacetic acid is quite simple. To about two teaspoonsful of fresh urine add six drops of liquor ferric chloridi, U. S. P. If the urine turns reddish a small amount of diacetic acid is present; but if it turns a deep Burgundy red, it shows a tendency to acidosis, an indication for the diabetic to reduce his fats, or cut them out altogether, until there is no diacetic acid in his urine. It is better, however, to teach the diabetic to send for, or report to his doctor when he finds the heavy red color on adding the iron to his urine. The diabetic should know that if he takes aspirin the ferric chloride test for diacetic acid will be positive. The ferric chloride test need not be used by the patient unless there is sugar in his urine.

WHEN AND HOW TO USE INSULIN

If after two or three days on trial diet number one there is still sugar in the diabetic's urine he is given from three to five units of insulin twenty minutes before eating two or three times a day; and if in twenty-four hours his urine still contains sugar the insulin is increased to six or eight units three times a day. If in another twenty-four hours the sugar has not disappeared from the urine, fifteen units are given three times a day. In the severe cases twenty units may have to be given three times a day before the patient's urine becomes sugar free on trial diet number one, but in the majority of cases five or ten units two or three times a day will be sufficient. When the patient's urine becomes sugar free on diet number one from the use of insulin, the diet is increased to number two and if the sugar returns in the urine the insulin dosage is increased until the urine is free from sugar. Then diet number three is given, and if the sugar reappears in the urine the insulin is increased by three to five units before each meal, each day, until his urine becomes sugar free.

The diet is increased to trial diet number four in the same way, increasing the insulin slowly until the urine is sugar free. After the patient's maintenance diet and his insulin dosage have been worked out as above described he is kept on it, with the same dose of insulin for several weeks, the effort being to keep the urine sugar free, without insulin reactions. If the in-

sulin reactions occur, the insulin is reduced or the food increased.

Discontinuing the Insulin. In many cases of diabetes after a few weeks' rest to the pancreas by dieting and by the use of insulin, the patient's carbohydrate tolerance is increased. In such cases the insulin dose is gradually decreased and if the sugar does not reappear in the urine the insulin may be discontinued permanently. When the insulin is discontinued the patient should be made to realize that he should never overeat, that a food debauch may break his carbohydrate tolerance and he will then have to use insulin again.

From the above statement of facts the idea that once a person begins the use of insulin it is dangerous or harmful to leave it off is proved to be erroneous. It is true the severe diabetic may have to continue insulin for the rest of his life, but without insulin he could not live long. With insulin and the proper diet there is no reason for diabetes to interfere with the health or efficiency of the most severe cases of diabetes. Insulin is therefore a great boon to diabetics and thousands are living today who would have been dead without it.

Insulin is not habit forming, but it should not be left off suddenly without at the same time reducing the diet in proportion to the amount of insulin used. The patient taking insulin should keep on hand an adequate supply, but if he cannot get insulin he should reduce his food by one-half, or even two-thirds, and leave off the fats altogether, because the principal danger from leaving off the insulin suddenly is acidosis, or even coma. It is not altogether the leaving off the insulin that is harmful, but the greatest danger lies in continuing the extra food that the diabetic cannot metabolize without using insulin.

We have had a number of diabetics whose carbohydrate tolerance was increased to such a degree that they did not need the insulin, but they insisted upon continuing it because they said they felt better while using it. This observation has been made by others, which leads us to believe that insulin may have other physiological properties besides its effect on carbohydrate metabolism.

The patient using insulin should be made to understand that if for any reason his food is cut down his insulin dose should be reduced in proportion. If he

fasts a day he must use no insulin without explicit directions from his physician; and if diarrhoea develops the dose of insulin should be reduced because food may pass through the intestines without digestion and the diabetic with diarrhoea may have a low blood sugar, which, with the addition of insulin, may be reduced to a dangerously low level. A number of clinicians have reported hypoglycemic reactions from the use of even small doses of insulin with diabetics who have diarrhoea.

The Time of Administration. There is a difference of opinion as to the best time for the administration of insulin. We believe, however, that the method employed by Banting" in the Toronto Clinic of using insulin two or three times a day, 20 minutes before the morning and evening meal, has many advantages. In the severe cases insulin may be given before each of the three meals and if the patient is sick enough to require a night nurse, the midnight dose may be added. In the case of a laborer, Woodyatt and Wilder advise giving only one dose a day and that before breakfast. In such cases most of the carbohydrates for the day are given for breakfast.

The Method of Administration. It may be stated, without fear of contradiction, that no pancreatic extract or other preparation said to contain insulin is of any value whatever when administered by mouth. The only method of administering insulin that will give any results is hypodermatically. It is best given under the skin, and not intramuscularly. When administered intramuscularly insulin causes pain because it has a slightly destructive and irritant effect upon muscular tissue.

The subcutaneous spaces in the outer surface of the arm, two or three inches below the shoulder, and over the breast and abdominal muscles or the inner surface of the thighs are favorable sites for the use of insulin because it can be used there without causing tension of the skin. The needle should not be used at the same place twice in succession because it may produce scar tissue and when that occurs the insulin, if absorbed at all, will be absorbed very slightly.

The fine platinum, or gold hypodermic needle which can be sharpened every few days on a fine stone, and which can be flamed, is less painful than the ordinary needle and its use saves the time necessary for boiling the steel needles. The initial

cost of the platinum or gold needle is more, but since it will not rust, it is economical in the long run. Strict asepsis should be taught to, and practiced by the diabetic using insulin because even a slight infection may change a mild case of diabetes into a severe one.

The Insulin Reaction. For a time it was feared that the reaction from an overdose of insulin might result in lowering the blood sugar to a dangerously low level, but with experience there is no longer fear of the insulin reaction with the size doses now ordinarily used. Unfortunately someone called the hypoglycemic reaction "insulin shock," which has had the effect of unduly stressing the dangers of an overdose of insulin. Indeed, it is desirable for patients using insulin to have an occasional mild reaction, the symptoms of which are hunger, weakness, nervousness and sometimes profuse perspiration. We have had many insulin reactions with our patients, who are relieved in a very few minutes by taking three ounces (one-half glass) of orange juice, or a teaspoonful of sugar. A glass of buttermilk will also relieve the symptoms of the insulin reaction but it is slower in its action than orange juice or sugar.

While the insulin reaction is usually harmless, it is within the range of possibility that a severe reaction could occur in which the symptoms would be collapse and unconsciousness. Convulsions following the administration of insulin in adults have been reported. Children with severe insulin reaction may become unconscious or have convulsions, but with the size doses that are used these symptoms are not likely to occur. In other words, there is no more danger of a serious reaction from the use of insulin than there is from an overdose of thyroid extract. If a serious reaction should occur the best treatment is to give adrenalin 0.5 to 1 cubic centimetre hypodermatically, which will restore consciousness in a few minutes by mobilizing the glycogen in the liver. The effect of adrenalin, however, is evanescent and the patient should at the same time or as soon as consciousness returns, be given orange juice or glucose by mouth. Glucose may be given intravenously if the patient is unconscious.

THE TREATMENT OF DIABETIC COMA

While it is always best to treat diabetic coma in a hospital it often is necessary to treat it at home. The general practitioner,

therefore, should be prepared at all times to treat diabetic coma, because an emergency call at night may be to such a patient; and when such a call comes he should plan to stay with the diabetic day and night until the patient comes out of coma or dies. It is even more important to remain with a coma patient than with an obstetrical case. Sustained vigilance on the part of a physician is often the price to pay for the life of a diabetic in coma.

The physician who is likely to be called to a suspected case of diabetic coma should carry in his handbag 200 or 300 units of insulin, several ampules of glucose, a few test tubes, small bottles of the reagents for Benedict's qualitative tests for sugar and for diacetic acid. A spirit lamp and a small bottle of wood alcohol are useful, though the tests for sugar may be made by placing the test tubes containing the reagents and urine in a tin cup of boiling water on a kitchen stove and keeping them there for five minutes.

The first thing to do in suspected diabetic coma is to examine a specimen of urine for sugar and diacetic acid. If both are present in large quantities, one need not wait to make the quantitative tests or for a blood sugar determination before giving twenty to fifty units of insulin and at the same time give a glassful of orange juice. The glucose may be added to the orange juice, though it is important to keep an accurate account of the amounts given.

The next step is to clear out the colon by enemata, repeating them every hour until there has been a thorough bowel evacuation. An ounce of magnesium sulphate may be given by mouth if the patient can swallow.

If food has been taken within three hours before the physician sees the case, the stomach should be emptied by gastric lavage. Indeed, it is best to use gastric lavage with moderately hot water in every case of diabetic coma, not only to remove any accumulation of food in the stomach but the heat from the warm water in the stomach stimulates the intra-abdominal circulation and is effective in overcoming shock. A quart of water may be left in the stomach after it is empty of food.

Water by mouth, if the patient can swallow, is important, not less than one pint every one or two hours for an adult pa-

tient with a tendency to coma. One should be very sure that the coma patient can swallow before giving him water by mouth. It is perfectly possible to drown an unconscious patient by giving water, or glucose solution in spoonful quantities. If the laryngeal or epiglottidean reflexes have been abolished fluids given by mouth will gravitate into the open larynx. If there is any doubt about the patient's being able to swallow, the glucose should be given intravenously, and water, one pint every two hours, may be given by hypodermoclysis.

If the patient cannot void his urine, a catheterized specimen should be obtained every half hour. If in one-half hour the examination of a second specimen of urine shows no change in the amount of sugar and diacetic acid, thirty units of insulin and sixty grams of glucose may be given intravenously; and in an hour this dose may be repeated if there is no change in the amount of diacetic acid.

After the initial dose, twenty to thirty units of insulin may be given every two or three hours until the patient comes out of coma; always guarding it with twice as many grams of glucose or dextrose. There is no danger whatever in giving large doses of insulin provided enough glucose is given at the same time to prevent hypoglycemia. It should be understood that in treating diabetic coma one is not trying to render the urine sugar free. It is the acidosis, manifested by the presence of diacetic acid in the urine, that needs to be combated; and in giving glucose or dextrose or other forms of carbohydrates to the coma patient it not only prevents insulin shock, but the fatty acids that are killing the patient are "burned in the fire of the carbohydrates."

The diabetic in coma is in a state analogous to surgical shock and should be treated accordingly. He should be kept warm with blankets, and hot water bottles may be used, remembering not to use them too hot because a hot water bottle burn may be a serious thing in a diabetic. Caffeine sodio-benzoate hypodermatically, or hot coffee or hot tea without cream by mouth, if the patient is able to swallow, should be given every two or three hours until the patient comes out of coma.

After the patient comes out of coma the dose of insulin should be reduced and the amount of carbohydrate should be correspondingly diminished. Usually twen-

ty units three times a day are sufficient, and the patient placed on the trial diet, giving no fats until the diacetic acid disappears from the urine. In the fat subject it is sometimes necessary to give more carbohydrate and more insulin because the patient's own fat may be burning enough to produce acidosis. In treating diabetes one should never forget the endogenous sources of food.

After the diacetic acid disappears from the urine the amount of food, including fats, is gradually increased up to the patient's maintenance diet, and enough insulin is given to keep the patient sugar free.

INSULIN IN RESPIRATORY INFECTION

Increased doses of insulin are necessary in the acute respiratory infections. There are no fixed doses of insulin for any groups or classes of diabetics. The dose for each patient must be worked out according to his proved glucose tolerance, and the dose may vary with an individual diabetic, sometimes without any discernible cause. The dose of insulin must be increased with the occurrence of infections because they lower sugar tolerance and tend to the production of ketone bodies. This is particularly true of the acute lung infections in diabetics, in whom coma was the frequent *modus mortui* up to the time of insulin. Now the diabetic with pneumonia can be carried through the crisis by giving large doses of insulin, 50 to 100 units a day, the dose depending upon the amount of sugar and diacetic acid in the urine. At the same time each day 500 to 1000 grams ($1\frac{1}{2}$ to 1 litre) of a ten per cent solution of dextrose should be given intravenously, if the patient cannot swallow liquid. If the case is a very severe one it is best to use the dextrose solution intravenously, or in a five per cent solution by hypodermoclysis, even if the pneumonia patient can swallow liquids. In addition water should be given freely. One should not be satisfied treating diabetes complicated with pneumonia or other infections with less than four litres (quarts) of fluids a day except in cases with a very weak heart.

Sometimes acute lobar pneumonia in a diabetic brings on coma in a few hours, and even though the lung is consolidated there is no cough. In one such patient, a child ten years old, a general practitioner made the diagnosis of pneumonia from the physical signs even though the diabetic

child was in coma and was not coughing. The patient was brought out of coma by the use of insulin and dextrose intravenously. She made a beautiful recovery.

Pneumonia usually does not break the diabetics carbohydrate tolerance permanently; and after the crisis it is important to watch the patient's blood sugar and urine, and reduce the insulin dosage in order to prevent hypoglycemic reactions.

Even a slight cold may result in pneumonia and thus precipitate coma. The diabetic with coryza or bronchitis therefore should be kept in bed and several specimens of urine examined a day. If the amount of sugar is increased and diacetic acid appears in the urine, the dose of insulin must be increased and the fats in the diet decreased. Often it is necessary in infections to cut out the fats entirely and increase the carbohydrates until the diacetic acid disappears from the urine.

Tuberculosis. On the undernutrition diet, before insulin was discovered, tuberculosis was a frequent sequel of diabetes; and it then was the terminal infection responsible for many deaths. Tuberculosis still occurs in diabetes, but it is a much less serious complication because with the use of insulin the tuberculous diabetic can metabolize sufficient food to build up his nutrition so that he can resist and conquer the infection of tuberculosis.

It has occurred to us from an experience with a tuberculous diabetic, and other tuberculous patients, that perhaps a diet deficient in vitamin A may be a factor in the etiology of pulmonary tuberculosis. This patient, a college graduate, developed diabetes in 1920. He had learned to weigh and measure his food and calculate his own menus. He kept his urine sugar free, but he was much undernourished on a diet of about 1200 calories a day. He came to us in 1924 to determine whether or not he should have insulin. In making the routine physical examination it was found that he had unmistakable physical signs of pulmonary tuberculosis. X-ray examination confirmed the diagnosis. He had been on a high fat diet but he did not like milk, cream, or butter that are rich in vitamin A; and was getting his fats from olive oil, which he liked, but which contains no vitamin A, that is known to protect against acute respiratory infections. With the use of insulin he could take a high caloric diet, and he changed his fats from olive oil to milk, cream and butter.

He improved rapidly and soon was clinically cured of his tuberculosis.

Of course, one case does not prove that a diet deficient in vitamin A predisposes a diabetic to tuberculosis; but that added to the experience of finding other patients who did not drink milk or cream or use butter and developed tuberculosis, and in whom the disease was arrested after going on a diet rich in milk, cream, butter and eggs, that are rich in vitamin A, have so impressed us that we now insist upon our diabetics getting his fats largely from milk fat that is rich in vitamin A.

The diabetic with tuberculosis should be hospitalized over a long period because it is very difficult for such cases to be cared for properly at home.

MANAGEMENT OF THE SURGICAL DIABETIC

Before the discovery of insulin surgery upon the diabetics was followed by a high mortality. Now operations upon diabetics who have been prepared by the proper diet and the use of insulin are as safe as upon any other class of individuals. Except in a very few severe diabetics who occasionally seem to be totally depancreatized, the blood sugar can be reduced to normal and the ketone bodies can be removed from the blood in a very few days; and the patient can be prepared for any operation.

Gas-oxygen and spinal anaesthesia are the preferable anaesthetics because ether tends, at least temporarily, to produce hyperglycemia. Chloroform should never be used upon the senile diabetic because arteriosclerosis is frequently associated with diabetes and no one can tell the state of a heart muscle in an old diabetic. Local or spinal anaesthesia is preferable to a general anaesthetic particularly in the surgery of the extremities. Even major operations upon the diabetic, as those of the abdominal cavity, may often be performed under spinal or local anaesthesia.

Following operations of any kind upon the diabetic the urine should be examined for sugar and diacetic acid every three or four hours. If there is no sugar or diacetic acid in the urine and the patient can take no nourishment it is best not to give insulin the first twenty-four hours after operation; but if there is diacetic acid in his urine the insulin should be given, and glucose, intravenously, if necessary; two grams to each unit of insulin. If there is a tendency to acidosis, thirty or forty units of insulin may be given three or four

times a day, or every three hours; but at the same time sixty or eighty grams of glucose should be given to prevent a hypoglycemic reaction and to aid in metabolizing the fatty acids in the blood and tissues. If there is only a small amount of diacetic acid in the urine, ten or fifteen units may be given three times a day, giving at the same time twenty or thirty grams of glucose either by mouth or intravenously. If the patient can retain it, orange juice may be given instead of glucose. One glassful (six ounces) of orange juice contains about twenty grams of carbohydrate.

If glucose has to be given intravenously it is best to use the ampules prepared by reliable pharmaceutical houses. It is important for the glucose solution to be sterile, but it should never be boiled, because boiling cooks sugar and forms a caramel-like substance, which in the blood may cause death. If the sterile solution has to be made fresh, boil the water, and after it has cooled for a few minutes add the glucose to make a five per cent solution, place in sterile bottles and cool to body temperature by running cold water over the bottles.

An important post-operative procedure with diabetics is to give them plenty of fluids, not less than four litres (quarts) of fluid a day. If the patient is vomiting, it is best to give fluid intravenously or by hypodermoclysis. It will not do to depend upon proctoclysis for the administration of fluids and glucose to the diabetic after operations, because absorption from the colon is uncertain and the post-operative diabetic must have fluids and carbohydrates to keep down acidosis.

From the above suggestions regarding the surgery of diabetes the difficulties of caring for such cases at home would seem to be almost insurmountable. The general practitioner, therefore, should advise the diabetic with gangrene or other surgical complications to go to a hospital and place himself under the care of an internist who has had ample experience in treating and dieting such cases. Likewise it is important to select a surgeon who has had a large experience in operating on diabetics. Of course in emergencies the general practitioner may have to operate on the diabetic at home, under which circumstances he will have to do the best he can with the resources at his command.

Appendicitis. Diabetics may have acute appendicitis and in the severe cases the

infection may bring on acidosis and even coma. When the diagnosis of acute appendicitis is certain, there should be no delay in the operation even if coma is impending. In such cases 1000 c.c. of a 10 per cent dextrose solution should be given intravenously and at the same time 15 to 50 units of insulin should be given hypodermatically. At least 3000 or 4000 c.c. of fluid must be given a day. 1000 c.c. of 5 or 10 per cent dextrose solution may be given intravenously, guarded by 25 to 50 units of insulin given hypodermatically every eight hours and extra doses of insulin may be added if the blood sugar is high and diacetic acid is present in the urine. Another 1000 c.c. of normal salt solution, or Ringer's solution may be given by hypodermoclysis, or by proctoclysis. The intravenous dextrose solutions and insulin should be continued for several days until all danger of post-operative acidosis is over. The diet of the diabetic convalescing from an abdominal operation should be adjusted to his particular needs the same as if he had not been operated upon.

Gall Bladder Infections. When the anatomical relations of the gall bladder, liver and pancreas are considered, coincidental infections of the gall bladder and liver and pancreatic duct and the islands of Langerhans must be frequent. Unquestionably the same cause that produces gall bladder and liver infections may be responsible for the pancreatitis that often precedes diabetes. As Joslin¹² has pointed out the patient with gall bladder infection, or gall bladder stones, is a potential diabetic; and the surgical drainage, or removal of the gall bladder may improve the carbohydrate tolerance of the diabetic. Joslin states that "it is sound doctrine to advise the removal of gall stones to avert diabetes."

The preparation of the diabetic for a gall bladder operation, and the after treatment should be the same as that previously described for appendicitis operations on the diabetic. The mortality in gall bladder operations on the diabetics should be no greater than in non-diabetics, provided that the surgeon has associated with him a clinician experienced in directing the diet and use of insulin before and after operations on diabetics. The mortality of gall bladder surgery on diabetics by the amateur surgeon, who has a limited knowledge of the nutritional principles involved

in the management of diabetes, will be inordinately high.

DIABETIC GANGRENE

Diabetic gangrene is the most frequent and the most serious complication of diabetes in the adult diabetic after fifty years of age. It is essentially a part of a general arteriosclerosis, involving particularly the lower extremities, and therefore occurs with increasing frequency as the diabetic advances in years. Diabetic gangrene usually occurs in mild diabetes of the senile diabetic, who has considered his diabetes of little consequence because he can keep his urine sugar free, on a liberal diet. It therefore is important to impress upon the senile diabetic that the very mildness of his disease constitutes a danger to him because he does not have to diet as carefully as the more severe diabetic whose urine becomes loaded with sugar on the slightest infraction of his dietary regimen.

Morrison, in a study of mortality statistics in diabetes in Boston found that between the years of 1895 and 1913, 23 per cent of 775 fatal cases resulted from gangrene. This is in marked contrast to the recent statistics of Joslin who found that deaths from diabetic gangrene occurred in only 3.3 per cent of his patients who died. Certainly a contributing factor in Joslin's very low mortality and morbidity of gangrene lies in the thoroughness of his instruction to diabetics in methods of preventing gangrene, and to his management of his gangrene patients before, during, and after operations. Diabetic gangrene will continue to grow less frequent as diabetes and its complications are more properly treated by general practitioners who treat probably 95 per cent of diabetes.

Preventing Gangrene. Much may be accomplished in the prevention of diabetic gangrene by impressing upon the adult diabetic the importance of keeping down the fats in his diet, thus decreasing his tendency to arterio-sclerosis. He also should receive careful instruction regarding personal hygiene, particularly as applied to the care of his feet.

The diabetic should have his regular morning full bath and should never fail to bathe his feet before retiring. Indeed, he should be more careful about the cleanliness of his feet than of his face. He should put on fresh hose every morning and should have two or three pairs of

comfortable shoes so that he can change them each day and allow the other one or two to dry out before using them again. He should exercise great care in trimming his toe nails and in shaving his corns; because gangrene of the foot often starts from minor injuries on the toes.

Perhaps the most important one rule that can be taught the adult diabetic is that no matter how trivial an injury to his foot or toes he may receive he should consult his physician immediately so that he may receive the proper treatment to heal the lesion. The nicking of the skin in trimming a toe nail, or a corn, or other callosity of the foot, or a small blister on the foot rubbed by a shoe often is the beginning of gangrene of the foot, that may result in the loss of the victim's leg, or even his life may be sacrificed by delay in receiving the appropriate treatment.

Treatment of Diabetic Gangrene. Rest in bed is important even when the slightest gangrenous spot appears on any part of the foot. The lesion should be sponged off several times a day with a 50 per cent solution of alcohol, with or without mercuric chloride (1 to 5000). A sterile gauze sponge saturated with this alcoholic and bichloride solution should be kept wet for an hour or two in the beginning of treatment. This will tend to keep down the infection and heal the lesion. The application of moderate dry heat from electric lights bulbs in a frame so that the bulbs will not be too near the foot is helpful in promoting the circulation of the foot and leg in the mild and dry form of gangrene. This treatment may be sufficient to heal the small dry superficial gangrenous spots that appear on the foot of diabetics whose blood sugar is kept down by the proper diet, and the use of insulin, if necessary.

When to Amputate. The question of whether or not, and when, to amputate must be decided upon the conditions found in each individual case. In the dry cases usually in the senile diabetic in which there are no evidences of systemic infection it is desirable to wait until the diabetes can be controlled by dieting and by the use of insulin. Usually this can be accomplished in two or three days. In the moist cases, the fulminating type, in which there is fever, perhaps chills, sweating, leucocytosis, and prostration, septicemia is impending or may be present already, an immediate operation is demanded. In such cases the dietary management is much the same as that described in treat-

ing infections of any kind in diabetics. Even in the most severe cases the diabetes usually can be controlled; and if the patient dies it is from the septicemia that has already taken place; or from the senile heart that is so often associated with the general arteriosclerosis seen in diabetes. Such cases should be recorded as deaths from septicemia, or arterioses, to which the diabetic gangrene has been only a contributing factor.

How Much to Amputate. When it has been found necessary to amputate in gangrene of the toes or feet in diabetes, the site of the amputation is an important consideration, depending upon the conditions found in each individual case. While conservatism is desirable in deciding the site of an amputation in diabetic gangrene, the rule of going well above the gangrenous area should be followed; because if the tissues incised are involved in the infection usually associated with gangrene, healing of the wound will not take place, or be very slow, and a second and higher amputation may become necessary. It is rare that one or two gangrenous toes may be amputated and the wound heal properly. It does occasionally happen when the circulation in the foot is good, and the line of demarcation of the gangrene limited to the mid-portion of the toe, that a toe may be amputated and the wound heal properly. Even in such cases in a few months or a few years gangrene may reappear in the foot and an amputation below or above the knee has to be done. If the gangrenous area extends into the tissues back of the toes the amputation should be just below the knee, provided the arteries in that locality are not too sclerotic. X-ray pictures will sometimes show the extent of the arteriosclerosis and are helpful in deciding how much of the leg must be sacrificed. If the surgeon is uncertain as to the vitality of the tissues below the knee, it is better to err on the side of saving the life of the victim rather than attempting to save a few inches of his leg.

When gangrene of any part of one foot occurs and the amputation is necessary, the problem then becomes one of saving the other foot because it is likely that the same arteriosclerotic changes have occurred in both feet that predispose to infections and gangrene. The diet of the patient should be adjusted to his needs, and he should be taught the Buerger exercises, and the regimen necessary to keep the

circulation in the foot and leg in the best condition possible. The patient should also be impressed with the precautions necessary to prevent the occurrence of trauma and infections of his remaining foot.

SKIN INFECTIONS

Carbuncles. Carbuncles are a frequent and serious complication in diabetes, particularly on the neck, and on the back of the obese arteriosclerotic diabetic who up to that time had not regarded his diabetes as a matter of importance. Carbuncles usually develop in the mild diabetic who has had diabetes for years, and who can control his diabetes by dieting but does not. Carbuncles always lower carbohydrate tolerance, and change a mild diabetes into the severe type with mild acidosis, and coma not infrequently supervenes in the neglected cases.

Carbuncles, formerly a frequently fatal complication in diabetes, with the use of insulin and the soluble carbohydrates, and prompt radical surgery usually yield to treatment, except in the neglected cases when septicemia has occurred before treatment is begun.

If the diabetic with a carbuncle is not too toxic from sepsis, a delay of twenty-four hours until the ketone bodies in the blood can be oxidized is advisable. In such cases three ounces (90 grams) orange juice and five ounces (150 grams of five per cent dextrose solution) (18.3 grams carbohydrate) may be given orally every three hours day and night. Ten units of insulin are given hypodermatically with each feeding. Usually in twenty-four hours the urine is sugar free and the diacetic acid has disappeared from the urine. Then free incision and drainage; and what is better when there is a line of demarcation around the carbuncle, the diseased tissue is excised. This leaves a wide open wound from which there is no absorption of the infective organisms and its toxins. When excision is practiced and the wound becomes thoroughly healthy, with no pus pockets present, skin grafting hastens the healing process; and has been resorted to in several of our diabetics with excellent success.

Furunculosis. Furunculosis is a frequent complication in neglected diabetes. It is more apt to occur in diabetics who take infrequent baths. Sometimes small or even large abscesses occur, particularly in the axillary region, and the condition

tends to become chronic. In many such cases furunculosis, which does not yield to the usual methods of treatment suggests to the physician that diabetes may be a factor in the infection and a urinary analysis shows glycosuria. Sometimes, however, in the arteriosclerotic obese diabetic, there is no sugar in the urine but he has a high blood sugar, the so-called "high renal threshold," and the furunculosis will not yield to treatment until the blood sugar is reduced and kept within the normal limits. Such a case was referred to us recently by a dermatologist. The patient's urine was free from sugar, except an occasional trace, which was thought by his physician to be "alimentary glycosuria." His fasting blood sugar was 0.225. At the same time a specimen of urine was free from sugar. The severe more or less generalized dermatitis with intense itching, and many furuncles about over his body, some of which became small abscesses in the axilla, did not yield to the usual treatment until he was placed on a diabetic diet when the skin lesions cleared up quickly.

Diabetes is at times associated with various other skin lesions which do not clear up until the diabetes is under control.

Epidermophytosis. Epidermophytosis of the feet ("athlete's foot") has become almost a universal disease, particularly among golfers and others who use shower baths at clubs and public places after participating in various games and other sports. The diabetic seems prone to epidermophytosis and it seems particularly difficult to cure them because of the arterio-capillary fibrosis of the extremities in the senile diabetic. The abrasions of the skin between the toes in such cases are often the area for the infection that results in gangrene. The diabetic therefore should regard epidermophytosis as a serious condition; and he should be relentless in his efforts to eradicate the infection that causes it.

Greasy ointments should be avoided in the treatment of epidermophytosis. Perhaps the best parasitic is salicylic acid in alcoholic solutions applied twice a day on cotton applicators to the cracked surfaces between the toes, after bathing and drying the feet. The following prescription has given very good results in treating epidermophytosis in diabetics:

Acidi SalicyliciGrs. XX (1.33 gm.)

Acidi tanniciDrs. I (4.0 gm.)
Spts. rect 70% q.s.a.d.—Oz. IV (60 gms.)

M. Sig: Apply on cotton applicator to infected areas twice a day after bathing and drying feet.

After the cracked surfaces between the toes have healed the stearate of zinc powder should be dusted between the toes twice a day in summer.

Erysipelas, or erysipeloid infection not infrequently occurs as a complication of epidermophytosis. The diabetic with "athlete's foot" should be taught to go to bed and call in his physician immediately if any such infection should occur. Such a case should be treated as any other severe infection in a diabetic.

PREGNANCY

The question often is asked should the diabetic woman be allowed to become pregnant. Our reply has been that if she can be confined in a hospital in which the obstetrician can have associated with him a competent internist, the hazard of the puerperium is increased but little. There is no reason why the pregnant diabetic should not be cared for, and confined at her home if her diet can be directed by one of the many general practitioners who have mastered the simple problems in nutrition required in the management of diabetes. Here again the physician's conscience should be his guide as to whether he should look after the pregnant and parturient woman at home or at a hospital, or should he refer her to a clinician who has had a larger experience in treating diabetes.

The diabetic wife who cannot obtain good medical attention during her pregnancy and in her confinement should use contraceptives rather than run the risk to herself and her child of pregnancy and parturition. It has been observed that the offspring of a diabetic mother is often abnormally large, sometimes requiring Caesarian sections for delivery. This perhaps is due to the high placental blood sugar of the mother providing extra nourishment for the foetus. Joslin¹³ suggests that for the last few months of pregnancy that the undernutrition diet be given the mother so that the foetus will not grow too large.

Hypoglycemia has been noted in the latter months of pregnancy, and the pregnant diabetic on an undernutrition diet should be watched for hypoglycemic symp-

toms, such as hunger, weakness and nervousness, or even attacks of unconsciousness and convulsions. Joslin suggests that a relatively high carbohydrate low fat diet is best during the last weeks of pregnancy.

Gray and Feemster¹⁴ observed hypertrophic islet cells in the child of a diabetic mother who died of hypoglycemia a few days after birth. They suggested the careful observation for hypoglycemia symptoms, and frequent blood sugar determinations in the new born child of a diabetic mother.

PERSONAL HYGIENE OF THE DIABETIC

The diabetic is just as ignorant as the average person regarding the function of the various organs and tissues of his body, and since he must take extraordinary good care of himself for the rest of his life he should be taught personal hygiene, with particular reference to measures to prevent the complications of diabetes. One or more hours may be profitably spent in teaching him the facts that he should know about ventilation, rest, exercise, bathing, the care of his teeth, and intestinal elimination. He should learn that he should never overwork, that long hours or excessive mental or physical fatigue often lowers sugar tolerance.

The physician should get from the diabetic the character of his work, the number of hours a day he is at his place of business and determine whether or not he is overworked. It happens not infrequently that the patient's urine is sugar free on his optimal diet, while resting in bed, but when he returns to his work the sugar returns. If he is then instructed to have shorter hours and be relieved of some of his work he can carry on and keep his urine sugar free. Acute and chronic fatigue are great foes of the diabetic.

Exercise and Rest. The question of exercise for the diabetic is an important one. Usually it is desirable for the diabetic whose urine is sugar free, to take daily moderate systematic exercises; but he should avoid too strenuous or long continued muscular effort. The diabetic should be taught a system of exercise suitable to his particular needs and which he may take in his room by an open window, before his morning bath and perhaps at night before retiring. Included in the exercises are movements of the muscles and joints of the feet and toes with the idea

of improving the circulation of the extremities. Outdoor exercise, particularly walking, is desirable and should become a part of the daily life of the diabetic. If the diabetic has not been accustomed to exercise he should begin with a walk of a hundred yards and gradually increase the distance each day as his strength increases, until he is walking several miles a day. Golf is an ideal, though expensive form of exercise for the diabetic, but the man over sixty should never play more than nine holes in an afternoon or morning.

The diabetic needs more sleep than the average person and should be taught to remain in bed nine hours at night, even if he does not sleep all the time. He should have a siesta of at least half an hour after the noon meal. Five and ten minute rest periods every two or three hours during the day are helpful, particularly to mothers and housekeepers.

The diabetic should be impressed with the necessity of two or three thorough bowel evacuations each day. Obstinate constipation is too frequently associated with acidosis for there not to be a relationship between them. Fortunately the diabetic diet of fruit, five and ten per cent vegetables, and fats will enable many to overcome constipation.

The diabetic should keep an accurate record of his daily or semi-weekly weight, and under no conditions should allow himself to become, or remain overweight. Indeed, it is best for him to be about ten pounds under the average weight of an individual of his height and age.

Finally it is important to impress upon the diabetic the fact that he has no reason to feel sorry for himself because he has diabetes; but he should rather be grateful to his physician for finding that he has a disease which need not shorten his life and which can be kept under control by the new methods of treatment. The diabetic, however, should feel ashamed of himself if he does not conquer his disease because most of the ills of the diabetic are a confession of his ignorance or self-indulgence.

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LIPOID NEPHROSIS AND ITS RELATION TO GLOMERULAR NEPHRITIS

Edwin G. Bannick's, Rochester, Minn. (Journal A. M. A., Jan. 20, 1934), present study of lipoid nephrosis and the so-called nephrotic syndrome suggests that lipoid nephrosis, in adults at least, is a form of chronic interstitial nephritis. The frequent association of lipoid nephrosis with definite glomerular nephritis, the fact that cases of clinically pure lipoid nephrosis may terminate in uremia, from the end-stages of glomerular nephritis, and the fact that not a single case typical of lipoid nephrosis in an adult has come to postmortem examination at the Mayo Clinic suggest that at least most cases of lipoid nephrosis represent a stage in, or an unusual type of, glomerular nephritis. If other cases occur they are extremely rare. The relatively high percentage of patients who have been cured of lipoid nephrosis, or who have shown marked and prolonged improvement, and the relatively slight evidence of glomerular nephritis in most instances at postmortem examination, even among patients who have given clinical evidence of glomerular nephritis, justify the grouping of these patients clinically in a separate group from that of ordinary glomerular nephritis. As long as the term lipoid nephrosis has been so uniformly accepted there seems to be no good reason for changing it.

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WHAT EVERY WOMAN DOESN'T KNOW— HOW TO GIVE COD LIVER OIL

Some authorities recommend that cod liver oil be given in the morning and at bed time so as to assure an appetite for the oil, while others prefer to give it after meals in order not to retard gastric secretions. If the mother will place the very young baby on her lap and hold the child's mouth open by gently pressing the cheeks together between her thumb and fingers while she administers the oil, all of it will be taken. The infant soon becomes accustomed to taking the oil without having its mouth held open. Mead's Newfoundland Cod Liver Oil, of minimum acidity and prepared from fresh healthy livers, is well tolerated by infants and children and is palatable without flavoring.

If given cold, cod liver oil has little taste, for the cold tends to paralyze momentarily the gustatory nerves. As any "taste" is largely a metallic one from the silver or silverplated spoon (particularly if the plating is worn), a glass spoon has an advantage.

Mead's 10 D Cod Liver Oil is made from Mead's Newfoundland Cod Liver Oil. In cases of fat intolerance the former has an advantage since it can be given in 1-3 to 1-2 the usual cod liver oil dosage.

PERSONAL OBSERVATIONS ON FRACTURES ABOUT THE ELBOW*

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I have nothing new to present. It is given to few to have new ideas. I have some old truths to discuss. Truths which bear repetition. It is the "twice told tale" that is important because it relates to our daily life and experiences.

The subject which I have chosen is far from standardized. Injuries about the elbow comprise countless combinations, therefore statements which seem to reduce the subject to a series of formulae are misleading and incorrect.

End results in fractures of the elbow are not good. It is wise to make this admission at the outset. A great many cases are seen in the large centers by interns on emergency duty. They are not as keenly aware of the danger of delay in immediate reduction as the more experienced surgeon. When swelling occurs it is too late to attempt reduction and immobilization in the most desirable position. If manipulative reduction of a fracture about the elbow is attempted when great swelling exists immobilization in flexion will cause interference with circulation, and at times an ischemic contracture will result. This single dreaded sequel to fractures about the elbow should be sufficient deterrent to any individual from assuming the responsibility unless he is prepared to care for any or all of the possible complications.

What causes Volkman's ischemia, and how can it be avoided? This dreaded complication is not long delayed in appearing if the bandage is too tight, or if there is hemorrhage about the joint. If the bandage is too tight, the bandage should be cut. If there is hemorrhage, free incision and evacuation of the clots should not be delayed. Once a contracture develops a long period of treatment with uncertain results can be expected. The avoidance of ischemic contractures is easier than the cure.

Proper early handling of injuries about

the elbow will avoid many late complications.

The handling of fractures requires meticulous personal attention.

Each case must be individualized.

Before discussing the anatomic factors essential in the treatment let us turn our attention to the diagnosis of fractures about the elbow.

Incomplete clinical examinations are responsible for failure to make a correct diagnosis in most cases. This has come to be true only since the advent of the X-ray, as this method represents the line of least resistance.

The popular trend today is towards preventive medicine. Certainly, prevention of prolonged disability and deformities is desirable. If more patients were adequately examined immediately following the accident there would be less demand for the cure of ankylosed deformed elbows.

In reference to the examination a few points should be emphasized—a brief history of the accident, the direction of the fracturing force, the loss of function and the time elapsed are of value in indicating the probable location of the injury, and whether it will be possible to maintain immobilization in a desirable position. Inspection indicates quickly deformity, swelling, and change in the axis of the limb. Palpation, which should always be light and gentle, indicates location of pain. There is no single sign more valuable than localization of pain. When this is combined with the history of loss of function a diagnosis can in most cases be made.

Crepitus should not be sought for, and the elbow should not be manipulated until the patient has been anesthetized.

An X-ray should be made in all instances where the clinical evidence indicates loss of function to any degree. The picture must not be accepted as negative evidence under two special conditions, in children and if only one view has been taken. In children where clinical evidence indicates that a fracture exists an examination under an anesthetic will clear up the diagnosis and prove the existence of a fracture.

Unfortunately in the past there has been a stop-gap diagnosis which has satisfied the indifferent surgeon—sprain. This convenient, almost meaningless expression, has caused distress to the patient and

*Presented before Oklahoma City Clinical Congress, October 29, 1933.

financial retribution on the part of the doctor.

It is unfortunate that so few seem conscious of the relative tensile strength of the ligaments about the joints and the small bony prominences to which they are attached. When subjected to strain the bone breaks before the ligaments sever or even tear. Occasionally one sees a severed triceps tendon but a proven sprain about the elbow is rare.

Anatomic knowledge, physical principles and human patience must be utilized to obtain good end results.

Anatomic knowledge to be utilized is divisible into two groups:

1. That which is essential for diagnosis.
2. That which is necessary for treatment.

The first of these may be subdivided further into two groups:

- a. The a n a t o m i c information which is gained by proper interpretation of X-ray pictures.
- b. The a n a t o m i c forces which produce and maintain deformity.

The first of these subdivisions specifically relates to the information which may be obtained from the X-ray, more particularly during the early years of life when so large a percentage of elbow fractures occur.

Even though a great amount of work has been done since Poland's epoch making study was made there is still too little attention devoted to using the information which we have relative to the epiphyses.

Before discussing the subject further let me remind you that too much stress is placed upon X-ray pictures. It should be accepted as axiomatic that the X-ray in early childhood cannot possibly give the needed information. This is due to the fact that the epiphyses have not ossified, therefore a fracture will not be demonstrated by a picture.

A brief review of a study which I made prior to 1921 on the normal elbow will not be out of place in this discussion. The essential factors are these; there are three epiphyses constantly found in the lower end of the humerus, the capitellum, the trochlear and the internal epicondyle.

"The first epiphysis to appear roent-

genographically is the capitellum. The earliest record of its appearance is at seventeen months. Up to the age of five years the capitellum is the only epiphysis which is evident roentgenographically. At some time during the fifth year the epiphysis for the head of the radius may appear. This is not constant as during the sixth year of life the shadow of this epiphysis is often absent. During the seventh year, the epiphysis for the head of the radius is constantly found."

"The internal epicondyle appears in some instances at this age, but it is not constant."

"An appreciation of the relationship of the internal epicondyle to the shaft will be helpful in making the diagnosis of epiphyseal 'separation.' The internal epicondyle appears close to, and almost continuous with, the internal oblique line of the shaft of the humerus."

"At eight years of age we have noted a beginning olecranon and trochlea. These epiphyses are not constant at this time. We are therefore forced to conclude that the trochlea does appear as early as the eighth year and is constantly found by the tenth year except in cases of underdevelopment."

"The capitellum which is the first to appear develops from within outward, and by the tenth year occupies the base of the shaft of the humerus from the middle of the olecranon fossa outward."

"During the eleventh year of life we have noted frequently a union between the capitellum and the trochlea, but no ossification of the epiphysis and the diaphysis. This is not, however, a constant finding, as we find the trochlea and the capitellum still ununited in some instances at twelve and thirteen years."

"During the twelfth year the capitellum and trochlea have in some cases not only completely developed but the epiphyseal line between them has become obliterated."

"The olecranon and trochlea are the most variable epiphyses at this age. The trochlea is represented in some persons by a small shadow; in others, it has, as previously stated, become united to the shaft."

"The olecranon epiphysis appears as early as the eighth year in some instances as a small elliptical mass widely separ-

ated from the ulna. This finding is rare. Occasionally this epiphysis is manifest at nine years."

"During the tenth year there are at times two distinct shadows in the region of the olecranon epiphysis. By this time this epiphysis is constantly found."

"At fourteen years of age, we find complete development and union of the epiphyses to their respective shafts, except in the case of the internal epicondyle. In one instance, we have noted that this also has occurred"

"During the fifteenth, sixteenth and seventeenth years, complete development and union to the shaft of the internal epicondyle is noted, the internal condyle alone remaining united at seventeen years."

"All the texts refer to the external epicondyle as appearing between the twelfth and sixteenth years. Our observations have led us to believe that it is not constant as a separate epiphysis. Its presence is the exception rather than the rule."

"There are certain constant factors in the appearance of the normal elbow joint. Some of these can be expressed by a number of lines which the author utilized in his work."

"The author believes that with a clear knowledge of the normal appearance of the elbow, and the relationship of the articular portion of the humerus and the ulna, many errors in diagnosis can be eliminated; and furthermore, it can be definitely stated from the roentgenogram that there is an existing deformity. If these things are possible, certainly they need more general adoption, because thereby a source of error will have been corrected."

"The position of the capitellum is most important. With the elbow flexed to a right angle, a lateral view of the elbow shows the capitellum occupying the sigmoid cavity. In early life, there seems to be a wide separation between the articular surface of the capitellum and the great sigmoid cavity, but with growth the capitellum occupies the entire cavity and is closely approximated to the sigmoid cavity."

"A plane passed through the middle of the long axis of the shaft of the humerus, prior to about the ninth year, passes behind the posterior border of the capitellum; after this period the plane bisecting

the shaft of the humerus has approximately two-thirds of the lower epiphyses anterior to it."

"The plane of the anterior limit of the shaft of the humerus shows at least one-half of the capitellum anterior to it."

"A plane at right angles to the base of the capitellum and bisecting it intersects the plane through the middle of the long axis of the shaft at an angle of about 130 degrees."

"When the forearm is extended on the arm and supinated a plane passed through the middle of the long axis of the humerus is intersected by a plane through the middle of the long axis of the ulna at an angle of approximately 170 degrees."

"The olecranon occupies the entire olecranon fossa."

(Isidore Cohn, Lewis's Practice Surgery, Vol. II Chap.3).

The second subdivision of the anatomic knowledge essential for diagnosis is accurate information relative to the forces which are conducive to the production of deformity. This is not an academic matter but an intensely practical problem. How can one interpret loss of function, attitude, and actual deformity unless the surgeon treating the patient is able to clearly visualize the origin and insertion as well as the action of the muscles in the vicinity of the injury? Deformity as we know is due to the fracturing force, gravity and muscle action.

Why do we admire our surgical predecessors so much? I think largely because of their accurate anatomic knowledge which enabled them to approach the operative field directly and with the least injury to important structures.

Every sign and symptom following an injury is present because of a definite anatomic change. It is the proper interpretation of the subjective and objective phenomena which makes for correct diagnosis. Further, it is essential to remember that conservative measures based on anatomic knowledge will produce satisfactory results.

Methods of manual reduction are valuable in direct proportion to the accuracy of application of forces to counteract the deforming factors.

I have repeatedly stated that I believe that there is too much operating in fractures. This is due to the fact that funda-

mental principles of anatomy and physics are neglected. Unless one considers the origin and insertion of muscles in the vicinity of the fracture he cannot intelligently reduce the deformity. Many of us overlook the fact that loss of function, as well as deformity, are due to lack of harmony produced by the unopposed contraction of the groups of muscles which remain attached above and below the site of the fracture. If we are to be successful in reducing the deformity following fractures our force or pull must be applied in such a way that it will directly oppose the contracting force.

The treatment varies according to the location of the fracture. In such a presentation one must limit the varieties to be discussed. Briefly I will discuss the following: supracondylar, external condylar, internal condylar, head of the radius and fractures of the upper third of the ulna.

Supracondylar fractures are of two types—the extension and the flexion variety.

In the extension type the position of greatest stability is hyperflexion because the triceps act as a natural splint, and there is relaxation of all of the flexors which have a tendency to bring the distal fragment into the bend of the elbow.

In fractures of the internal condyle, it is desirable to have not only hyperflexion, but also pronation of the forearm.

This is true because contraction of muscles attached to the shaft, particularly the brachioradialis, tends to supinate the forearm. The supinator brevis by its contraction following fractures of the internal condyle tends to diminish the carrying angle.

In fractures of the external condyle, the position of greatest stability is one of hyperflexion and supination, for these reasons:

Pronation would allow the pronator teres to pronate the forearm and thus pull the external condyle away from the shaft. In supination the pronator is opposed by the artificial force of the bandage, and contraction of the supinator brings the external condyle into closer contact with the humerus.

Reduction having been accomplished and the proper dressing applied, the difficulty often arises of keeping the bandage from slipping from the elbow. It has been found

useful to have a conical bag made, the apex down. In such a bag the hyperflexed forearm and arm are slipped and the whole is supported by tapes around the neck.

The after care is too important not to have a few words said about it.

Prolonged hyperflexion necessarily results in contractures of the flexor muscles. Therefore, it is essential to diminish the flexion as soon as it is safe. This may be begun about the tenth day. At each dressing contrast bath, massage and active motion are given. The range of motion should be limited by evidence of pain. Pain is indicative of injury to the part. Flexion and extension within a given arc should be done once at each dressing during the early after care of these patients.

Plaster molded splints should be used.

A source of annoyance is the tendency toward internal rotation of the arm as a whole. This is due to the position of hyperflexion which is accompanied by an internal rotation of the shoulder. In order to overcome this tendency, one must insist on rotation outward of the shoulder at the very earliest moment. Shoulder movement will not disturb the position of the fracture of the elbow if the bandage is snug. Some may consider these statements highly theoretical. To them, I commend neglect of this precaution, and they will later be convinced of the truth.

During the first twenty-four hours it is urgent that the part be observed closely. Volkman's ischemia may result from a tight bandage which has been applied for as short a period as six hours. A case which was observed by me resulted from the bandage remaining on for twelve hours.

The application of the bandage in the position of hyperflexion requires special care. All bandages should include the hand. If the bandage does not include the hand secondary swelling of the hand will be greater than that of the forearm, and any form of gauze sling around the wrist will cause a great constriction at this level. This will create a vicious circle. This difficulty can be overcome by bandaging the hand as well as the forearm and arm. A rubber tube used as a sling is preferable to a gauze bandage, because the elasticity of the former allows for relaxation if swelling occurs.

After the fourth week it is very important that active as well as passive

movement be encouraged. Massage and resistive exercise contribute in a large measure to a perfect result.

A few cases of the supracondylar fractures, which are of the flexion variety, cannot be maintained in flexion as the lower fragment is pulled upward and backward by the triceps.

We read from time to time about putting wire and pins through the olecranon in these fractures in children. The use of any form of surgery about the epiphyses should be avoided if possible. Trauma favors premature ossification and a consequent permanent shortening of the arm.

What causes ankylosis in fractures about the elbow? The persistence of a change in the axis of one or more of the articular surfaces, or a displaced free fragment which acts as a wedge between the articular surfaces.

Traumatic ankylosis of the elbow is not an uncommon sequel of fractures about the elbow. There are certain type groups that will regularly result in partial or complete ankylosis unless definite effort is made from the onset to avoid disability.

Group 1. Fractures in children with displacement of an epiphysis.

Group 2. Supracondyloid fractures, either comminuted or simple in which a vicious union or bony ankylosis has resulted.

Group 3. Fractures with displacement or a free fragment, which acts like a foreign body wedged between the articular surfaces. In this group will be considered fractures of the coronoid process, the internal condyle in adults and children and fractures of the head of the radius.

Group 4. Fractures of the ulna, particularly the upper third of the shaft.

Group 1. When seen immediately after the accident it is imperative that the displaced epiphysis be restored to its normal bed at once. A proper knowledge of the normal position is essential for the accomplishment of the above.

Failure to reduce the deformity means limitation of motion and alteration of the carrying angle. It is not the ideal thing to remove an epiphysis, but when function of the joint is at stake it is justifiable.

Group 2. The second group of cases is those in which there has been a supra-

condyloid fracture, where angular deformity has resulted.

The change in the axis of the lower fragment alters the relationship of the epiphyses of the humerus to the sigmoid cavity.

It is easy to understand the limitation of extension as we note the obliquity backward of the distal end of the humerus. The olecranon meets an obstruction before the extension is accomplished, and it no longer can reach the olecranon fossa, but is stopped by the lower end of the humerus. Flexion is impossible because the coronoid probably strikes against the lower end of the humerus before it can reach the coronoid fossa.

In this group partial ankylosis is preventable by immediate reduction:

There must be complete restoration of the axial plane of the shaft and epiphysis, otherwise a limitation of motion will result.

Group 3. This group comprises fractures with displacement of a free fragment, which acts like a foreign body wedged between the articular surfaces. Fractures of the coronoid process, the internal condyle in adults and children, and fractures of the head of the radius are included in this group.

The free fragment should be removed when it is impossible to replace it and maintain it in position. As a rule removal does not cause impairment of function. In some cases perfect results have been obtained by removal.

Group 4. This includes fractures of the ulna, particularly the upper third of the shaft.

1. Reduction of the deformity in fractures of the upper third of the ulna is essential. If this is not accomplished the ulna acts as a pendulum, swinging as a rule away from the midline, stretching the internal lateral ligament and thus diminishing the carrying angle. More than this happens. Flexion of the upper fragments, which results from contraction of the brachialis anticus, added to the change in the axis of the upper portion of the shaft, alters the relationship of the sigmoid cavity of the olecranon and the articular portion of the humerus. The result of this, if not

corrected, is a limitation of flexion of the elbow.

2. When the deformity is reduced no limitation of motion results.

3. If it is not possible to maintain reduction, open operation is advisable.

The management of injuries about the elbow requires the most careful attention to details if our end results are to be better.

1522 Aline Street.

WHAT EVERY WOMAN DOESN'T KNOW— HOW TO GIVE COD LIVER OIL

What Every Woman Doesn't Know is that psychology is more important than flavoring in persuading children to take cod liver oil. Some mothers fail to realize, so great is their own distaste for cod liver oil, that most babies will not only take the oil if properly given but will actually enjoy it. Proof of this is seen in orphanages and pediatric hospitals where cod liver oil is administered as a food in a matter of fact manner, with the result that refusals are rarely encountered.

The mother who wrinkles her nose and "makes a face" of disgust as she measures out cod liver oil is almost certain to set the pattern for similar behavior on the part of her baby.

Most babies can be taught to take the pure oil if, as Eliot points out, the mother looks on it with favor and no unpleasant associations are attached to it. If the mother herself takes some of the oil, the child is further encouraged.

The dose of cod liver oil may be followed by orange juice, but if administered at an early age, usually no vehicle is required. The oil should not be mixed with milk or the cereal feeding unless allowance is made for the oil which clings to the bottle or the bowl.

Mead's 10 D Cod Liver Oil is made from Mead's Newfoundland Cod Liver Oil. In cases of fat intolerance the former has an advantage since it can be given in 1-3 to 1-2 the usual cod liver oil dosage.

OVARIAN THERAPY: RELATIONSHIP OF FEMALE SEX HORMONE TO HEMOPHILIA

The work of Jacob Brem and Jerome S. Leopold, New York (Journal A. M. A., Jan. 20, 1934), does not support the theory of the close relationship of the female sex hormone to hemophilia: 1. They have not been able to demonstrate the presence of the estrogenic substance in the urine of normal males. If the female sex hormone holds hemophilia in abeyance, it should be present in the urine of all normal males rather than in isolated cases. 2. The commercial estrogenic substance employed by the authors, of known potency, failed to reduce the coagulation time of the blood or stop the several hemorrhages in their hemophiliac patient. It would seem that symptomatic treatment and blood transfusions are still the methods of choice in hemophilia.

FOOD POISONING

J. C. Geiger and J. P. Gray, San Francisco (Journal A. M. A., Sept. 23, 1933), define food poisoning as that clinical syndrome resulting from the ingestion of food contaminated by organisms of a specific type, including the paratyphoid-enteritidis groups and certain of the staphylococci. They report on three outbreaks investigated by the San Francisco Department of Public Health. The first was believed to have been due to meat (beef) contaminated by *Bacillus enteritidis*; the second was caused, in all probability, by tomato sauce and turkey contaminated by *Bacillus paratyphosus B*; the third was probably due to the cream filling in chocolate eclairs, contaminated by a heavy yellow pigment-producing staphylococcus. The authors outline the investigative procedures, emphasizing the parts played by epidemiology and the laboratory. Practices carried out in San Francisco are compared with those of other major cities, as determined by questionnaire methods. The control of food poisoning is not an unachievable goal, but present-day methods must be more intensively and extensively applied. Three avenues of approach include: (1.) supervision of food handlers (human carriers). (2.) food inspection service (physical plant, methods of preparation, holding and serving and regulation of rodents and other animal carriers), and (3.) health education through an organized program and personal contact of the departmental personnel and the public.

TRAUMATIC INJURIES OF THE UPPER URINARY TRACT FOLLOWING INSTRUMENTATION

R. B. Henline, New York (Journal A. M. A., Jan. 20, 1934), points out the possibility of rupture of the ureter following manipulation must always be considered. It is more common than one would be led to believe. Many such cases go undiagnosed and heal without surgical intervention. Severe postcystoscopic reactions may be the result of minute ureteral injuries with a small amount of urinary extravasation. Gentle and careful intra-ureteral manipulation, particularly in a pathologic ureter, should always be the aim of the urologist. The author reports nine cases of ruptured ureter, all following ureteral manipulation and injury. Three patients required surgical drainage alone; two were subjected to nephrectomy because of badly infected kidneys; the remaining four recovered with palliative treatment. Experimentally, it was found impossible to rupture the normal ureter of the dog by forcible dilation with a large bougie during cystoscopy. Retrograde pyelography with forced syringe injections, as well as excretory urography, showed the ureter still to be normal. In three dogs the left ureters were forcibly ruptured and torn with a silver wire. Retrograde pyelography was then done to trace the extent of the extravasation. This was followed by excretory urograms and a similar extravasation occurred. In these ruptures surgical treatment was indicated because the excreted urographic fluid mixed with urine extravasated outside the urinary tract. The ureter of one dog punctured by a fine wire stylet failed to show any extravasation of fluid by an intravenous urogram. From a critical analysis of experimental and clinical data, excretion urography would seem to indicate accurately the existence and extent of gross injury or damage to the ureter. Also careful study and correct interpretation of the urograms are an invaluable guide to the further intelligent surgical conduct of the conditions arising from such injury.

THE JOURNAL

OF THE

Oklahoma State Medical Association

Issued Monthly at McAlester, Oklahoma, under
direction of the Council

VOL. XXVII MARCH, 1934, No. 3

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Medical Arts Building, Tulsa, Okla.

Entered at the Post Office at Muskogee, Oklahoma,
as second-class mail matter July 28, 1912.

This is the official Journal of the Oklahoma State Medical Association. All communications should be addressed to The Journal of the Oklahoma State Medical Association, 203 Ainsworth Building, McAlester, Oklahoma. \$4.00 per year; 40c per copy.

The editorial department is not responsible for the opinions expressed in the original articles of contributors.

Reprints of original articles will be supplied at actual cost provided requests for them is attached to manuscripts or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, 203 Ainsworth Building, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application.

It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

PRINTED BY HOFFMAN-SPEED PRINTING CO., MUSKOGEE

EDITORIAL

SUPPORT OUR ADVERTISERS

During the past two years we have suffered from a decrease in our income from advertising and this of course causes a constant drain on the Association resources. Every effort is being made to maintain the quality and size of the Journal but to do this we must have more advertising, as the difference between our income from this source and the cost of publication is too great at this time for us to stand over an extended period.

Will each member look over the field and find some more advertisers, speak to the detail man who visits your office and explain to him that his employer cannot

expect the support of the members of our Association unless he helps to support our Journal by using its pages for advertising purposes.

Let each member buy from the firms whose "ad" appears in the Journal.

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WHY NOT MORE COMMITTEES ON "HIGH COSTS?"

Now that the Committee on the Cost of Medical Care has gone on into the limbo of the past, we may well wonder why in the world the family's doctor bill was picked out for all the ado and to-do, and nothing done about all the other, bigger bills.

It would seem only natural, at least, that an investigation into the family doctor bill should be followed by an inquiry into the family automobile bill, usually about twice or three times as large. If the American "white-collar" class are suffering so terribly under the doctor bill, think of their agony under the automobile bill. But our statesmen at Washington are not appointing any committee to tour the land, at public expense, to probe the *high cost of automobile care*.

Then there are other "high costs." Even the medical-cost committee put the family's tobacco bill at about the same figure as the doctor bill. So which one is to be reduced? Why, the doctor bill, of course. The logic probably is that it is natural for smoke to go up, while medicine always goes down.

Next we find that the family bill for candy, soda, ice cream, and chewing gum also figures up to about the same total as the bill of the physician who is supposed to make the system do its duty again after all the above have clogged it to a standstill. The difference is that the candy, soda and gum have to be paid for in spot cash, while the doctor's gentle reminder is tucked away in a pigeonhole and forgotten. So what? Reduce the doctor's bill, naturally.

What about committees on the high cost of silk stockings, underwear, and pajamas, high cost of movies, vaudeville and radios, high cost of hair bleaches, face packs and permanents? Worst of all is the high cost of supporting politicians at Washington and the various state capitols and city halls who make the high cost of government higher and higher every year.

These are the people who seem able to

discover only one "high cost"—the cost of medical care! Let us have just one more investigation, this one to reckon how much it would cost the country to be without medical care! The "high cost of our medical care would then stand out, clear as daylight, as the most economical expense America has today. (Copied from New York State Journal of Medicine).

THE WORK CONTINUES

The following is a list of the members of the faculty for the completion of the Post-Graduate Medical Course, which was started in the Northeastern part of the State, and had to be discontinued on account of the action of the Board of Regents of the University:

Week of February 12th—Dr. George L. Waldbott, Detroit, Mich.

Week of February 26th—Dr. J. Victor Greenebaum, Cincinnati, Ohio.

Week of March 5th—Dr. Clifford J. Barborka, Chicago, Ill.

Week of March 12th—Dr. F. J. Hirschboeck, Duluth, Minn.

Week of March 19th—Dr. Cyrus C. Sturgis, Ann Arbor, Mich.

Week of March 26th—Dr. Max Levy, Memphis, Tenn.

We are very glad to announce that we will be able to complete this program, the administrative part being financed by the Oklahoma State Medical Association.

It is very gratifying to know that the regular medical profession of the State is standing so squarely behind this movement and thereby defying petty political procedures, which would use its influence to hamper this very important work.

THE MAY MEETING

Personal communication has been handed to the chairmen of all committees, requesting that they submit all reports at an early date, so that they can be published in the April issue of the Journal, and it is hoped that they will conform with this request. This must be done in order that the members of the House of Delegates may have an opportunity to peruse these reports and intelligently discuss them at the State meeting.

It is also imperative that anyone wish-

ing to present a paper before any of the sections, communicate with the section officer as soon as possible, so that the program may be completed for publication.

The Tulsa County Medical Society has made all necessary committee appointments and the committees are functioning at this time. They will appreciate everyone's cooperation so that this may be made a well organized meeting.

Below you will find an outline of the Tulsa County Committees, and should you have any business with any of these departments you will now know with whom you should communicate:

General Chairman, Dr. A. W. Pigford.

Registration and Badges, Dr. David V. Hudson.

Finance, Dr. Carl F. Simpson.

Entertainment, Dr. B. L. Branley.

Hotels, Dr. C. H. Haralson.

Golf, Dr. James Stevenson.

Scientific Exhibits, Dr. R. C. Pigford.

Publicity, Dr. W. Albert Cook.

Medical Reserve Corps Dinner, Dr. P. P. Nesbitt.

Editorial Notes—Personal and General

DR. E. E. CONNER, formerly of Erick, has opened offices in Mangum.

DR. WENDELL LONG, Oklahoma City, who has been ill for the past several weeks is reported improved.

DR. F. P. VON KELLER, Ardmore, is reported recovering from the effects of a dislocated shoulder which he received in late January.

DR. LeROY LONG, Oklahoma City, spoke before the Craig County Medical Society, February 6th, on the subject of "The Bile Tract Area."

DR. EARL D. McBRIDE, Oklahoma City, presented a paper at the Pan-American Medical Association which met in Caracas, Venezuela in March.

DR. C. E. NORTHCUTT, Ponca City, is President of the Ponca City Chamber of Commerce and was elected the most useful citizen for the year 1933.

DR. WILSON H. LANE, Ada, has announced his candidacy for Mayor and Commissioner of Public Justice and Safety, subject to the city primary, in March.

DR. McCLAIN ROGERS, Mayor of Clinton, was honored as that city's most useful citizen during 1933, at a joint meeting of the Rotary and Kiwanis clubs, in February.

DR. C. B. HILL, Guthrie, one time superintendent of the Western Oklahoma Hospital at Supply, has been appointed county physician, Logan County, to succeed Dr. Robert Allen.

DR. E. ALBERT AISENSTADT, Picher, spoke on the management and treatment of burns before the Okfuskee-Okmulgee County Medical Society, which met in Henryetta in February.

DR. AND MRS. HOWARD S. BROWNE, Ponca City, spent two weeks in February, in New Orleans, where Dr. Browne attended an Eye, Ear, Nose and Throat specialists's clinic, at Tulane University.

DR. NED R. SMITH, President of the Tulsa County Medical Society, gave a talk on "Tulsa's Health Problems," in February. This talk was sponsored by the Auxiliary of the Tulsa County Medical Society.

The Nurses' Training School at the Albert Pike Hospital was discontinued March 1st. Of the thirteen students enrolled in the classes, seven have reported to the University Hospital, and the other six to the Wesley Hospital.

DR. CHARLES M. PEARCE, McAlester, opened offices at 117½ North First Street in March. Dr. Pearce spent the month of February in Memphis, Tenn., where he attended the Campbell Clinic and the Mid-Southern Post-Graduate Assembly.

HUGHES COUNTY MEDICAL SOCIETY met at Calvin, February 9th, for luncheon and a business session. Dr. R. B. Ford, Holdenville, read a paper on "Diseases of the Gall Bladder." The Society will meet at Allen for their March meeting.

MUSKOGEE COUNTY MEDICAL SOCIETY met in the County Court House Tuesday, February 13th, at 7:30 for a business session, and at 8:30 for a non-medical program. A lecture was given by Dr. J. A. Walker, Shawnee, on "Pyramids of Egypt."

DR. E. S. FERGUSON, Oklahoma City, was elected chairman of the Oklahoma Section of the American College of Surgeons at their annual meeting in Oklahoma City in February. Dr. A. W. Pigford, Tulsa, was elected Secretary and Dr. LeRoy Long, Oklahoma City, Counselor.

CARTER COUNTY MEDICAL SOCIETY presented the following dinner program at Ardmore, March 5th, at 6:30 p. m.:

Invocation—Rev. E. M. Whitwell.
Address of Welcome—Earl A. Brown.
Introduction of Guests—Dr. Geo. E. Johnson.
Music—Douglas High School Quartette.
Chicken Dinner.

Benefits of Organized Medicine—Dr. L. S. Willour, McAlester.

Peptic Ulcer—Dr. Arthur W. White, Oklahoma City.

Toxic Goiter—Dr. LeRoy Long, Oklahoma City.

DR. MAIER, CHIEF BACTERIOLOGIST

The Merck Institute of Therapeutic Research, Rahway, New Jersey, announces the appointment of Dr. Eugene Maier as Chief Bacteriologist.

Dr. Maier is a graduate of the University of Tue-

bingen, Wuerttemberg, Germany, and completed his studies at the University of Erlangen, Germany.

Dr. Maier was associated with the Rockefeller Institute of New York as Research Assistant from 1926 to 1930. Since 1931, up to the time of becoming associated with Merck & Co., Inc., Dr. Maier has been at Bellevue Hospital, New York, in the department of pathology, as bacteriologist for the Tuberculosis Division of Columbia University.

PITTSBURG COUNTY MEDICAL SOCIETY met at McAlester, February 16th, Enloe Hotel, for their annual banquet. Dr. T. H. McCarley, President of the State Association, McAlester, and Dr. J. E. Hughes, Shawnee, were the guests of honor. The following program was given after the dinner:

Call to Order—Dr. E. H. Shuller, President.
Invocation—Dr. R. K. Pemberton.
Music—Miss Mary Jo Smith Quintet.
Address—Dr. T. H. McCarley.
Reading—Miss Margaret Echols.
Music—Miss Mary Jo Smith Quintet.
Pictures—Travelogue—Dr. J. E. Hughes.
Adjournment.

MUSKOGEE ACADEMY OF MEDICINE

The Muskogee Academy of Medicine was organized on February 9, 1934, at Muskogee, Oklahoma, with twenty active members. President, Dr. Chas. E. White; Vice-President, Dr. J. G. Rafter; Secretary, Dr. S. D. Neely. Board of Directors: Drs. J. Hutchings White, I. B. Oldham, C. V. Rice, F. W. Ewing and L. S. McAlister. The object of this organization is the promotion of scientific medicine in the territory of Muskogee. A program has been set for Thursday, April 5, 1934, as follows:

Dr. A. B. Chase, Oklahoma City, (1.) "Pain Around the Heart"; (2.) "The Thyrotoxicotic Heart"; (3.) "The Heart In Relation to Anesthetics and Surgical Procedures."

Dr. John Zahorsky, St. Louis, Missouri, two subjects unannounced, on pediatrics.

Dr. Willis C. Campbell, Memphis, Tennessee, (1.) "Fractures in and About the Neck of the Femur"; (2.) "Practical Application of Orthopaedic Principles."

These three will be guest speakers of the meeting. The meeting will be at the Baptist Hospital, Muskogee, Oklahoma, beginning at 1:00 p. m., April 5, 1934, and continue until finished. Lunch will be served at 6:30 p. m., after which there will be a round table discussion. The medical profession is cordially invited to attend this meeting. There will be no charges except for lunch, probably fifty cents, to members of the profession outside the city limits of Muskogee.

NOTICE

There will be a Mental Hygiene Conference held April 12, 13, 1934, at the Y. W. C. A., 320 West First Street, Oklahoma City, under the auspices of the Oklahoma State Nurses' Association. An extensive program has been arranged, featuring the authorities both from the medical profession and the nursing profession, and it is hoped that as a result of this meeting there may be organized in this State a Society for mental hygiene.

The physicians of the State are invited to attend.

ABRAHAM LINCOLN BLESCH

Drawn shades, gray shadows, the odor of flowers, the sound of subdued sobs—and another great soul has passed. For thirty-three years his busy fingers wielded the scalpel with cleverness and skill. For forty-five years his counsel and advice were sought by those who laid their lives in his hands.

Dr. Blesch was born of Swiss parents who moved from their native Berne to the Allegheny Mountains of Pennsylvania and founded an American dynasty. He was born in 1866, the year following the Civil war. During this stormy time of reconstruction the West was beckoning with open arms, and when he was five years of age his father left the mountains and brought his family to a prairie farm in Kansas where each day was begun with family prayer. The children were taught to be honorable, fairminded, and straightforward. They were also taught that every living soul is entitled to struggle for success in a free and open field where his abilities may reach their proper level. Under the influence of a kindly country doctor, the boy's ambitions were stirred and he graduated from Northwestern University Medical School, worked his way across to Europe by securing an appointment as ship's doctor, spent a year in Vienna, and returned to Kansas, where he practiced in a small town for two and a half years. He moved to Guthrie, Oklahoma, in 1893, where for ten years he continued in general practice, then realized the necessity for further training which he obtained by spending a year in Johns Hopkins University under Dr. Howard Kelly. In 1911 he moved from Guthrie to Oklahoma City, where he founded the Oklahoma City Clinic and Wesley Hospital, which institutions have continued to grow until the present time. He rendered distinguished service during the World war, having been Chief of the Surgical Department at Fort Sam Houston. He has been a member of the faculty of the School of Medicine in the University of Oklahoma since 1912, and his life has been one of great activity even up to the past sixty days. Literally, he has died in the harness.

Those who have known him for many years are unanimous in saying that he was a friend who could be relied upon under any and all circumstances. Those of us who have come to know and respect him during the past few years feel that his outstanding characteristic was a sense of fairness and a willingness to meet competition in the open and without fear. His comments in meetings were always keen and constructive; his loyalty to principles and to truth as he saw it could never be doubted; and his scorn for unfair practice was of that white hot variety which can only be admired.

A great trail was blazed across the history of Oklahoma by this man. A trail of influence, of inspiration, of accomplishment. The young men have lost a friend, the old ones have lost a colleague, and the world has lost a leader. May the sunny clime of immortality open before him like a soft green valley, receiving and caressing his soul and inviting it to lie down for the rest it so richly deserves.

—Basil A. Hayes, M.D.

NECROLOGY

The Committee on Necrology of the Muskogee County Medical Society desires to offer the following resolution for the Society's adoption in commemoration of its devotion and respect of Doctor Samuel Erskine Mitchell.

First: An expression of our gratitude of having had the privilege of an intimate association of such an earnest, high class physician.

Second: To voice the regrets of true and loyal friends.

Third: To extend our sincere sympathies to his family and legion of friends.

J. G. RAFTER, Chairman,

J. T. NICHOLS,

S. J. FRYER.

SAMUEL ERSKINE MITCHELL

1872—1934

Doctor Samuel Erskine Mitchell, son of S. W. Mitchell and Sophonia Dickson, was born at Dickson, Tennessee, on July 6th, 1872. He has six living brothers, two sisters deceased, one sister living. He moved to Hoyt, Indian Territory, on October 12, 1897, practicing medicine for one year; he located at Brooken, Indian Territory, in 1900, where he remained until 1904. He was graduated at the Medical College of the University of Nashville in 1900. He moved to Stigler, Indian Territory, in 1904 where he remained until 1918. He was married to Minnie Forrester, August 8, 1900. From this union there are two children, Rheta (Mrs. John Caldwell) of Muskogee, Oklahoma, and Samuel Eugene Mitchell of Oklahoma City, Oklahoma. In 1918 he entered the United States Army Air Service and was stationed at San Antonio (Kelly Field), Texas, where he remained eighteen months. He was discharged at Camp Pike Arkansas in August, 1919. He returned to Stigler, Oklahoma, and remained one year. He moved to Muskogee, Oklahoma, where he was in the practice of eye, ear, nose and throat for one year. He entered the employ of the United States Veterans Bureau when the hospital was opened in Muskogee, Oklahoma, in 1923, and remained here until his death. He was chief of the eye, ear, nose and throat department of this hospital. Doctor Mitchell was secretary of the Haskell County Medical Society for many years and served faithfully in this capacity, and as a delegate to the Oklahoma State Medical Association. He was president of the Muskogee County Medical Society in 1927. He was very active in the American Legion, and was a member of the 40 and 8. He was examiner for the United States Army as Air pilot examiner for many years. Doctor Mitchell was ever active in organized medicine, distinctly progressive in his work and well loved both by the medical profession and patients he came in contact with. He was a Lieutenant-Colonel in the Medical Reserve Corps of United States Army. He died at his home, 2429 Boston Avenue, Muskogee, Oklahoma, on February 23, 1934.

RESOLUTION OF THE KAY COUNTY MEDICAL SOCIETY

Whereas, our friend and fellow member, Dr. A. L. Hazen of Newkirk, Oklahoma, senior member of our Society, has been suddenly called from us; and,

Whereas, his loss is deeply felt by every member of this Society and by his legion of lay friends because, in thirty-four years of his practice in the medical profession, he has always exemplified the noblest of virtues in all his relationships; and,

Whereas, we join together to mourn the passing to his great reward of this public benefactor,—

Therefore, be it resolved by the Kay County Medical Society, at its regular session on February 16, 1934, that our sincere sympathy be extended to his beloved wife and his many friends.

The Kay County Medical Society.

C. E. Northcutt, President.

ATYPICAL FORMS OF DRY PLEURISY. RADIO- LOGIC AND CLINICAL STUDY

Samuel Brown, Cincinnati (Journal A. M. A., Jan. 20, 1934), observes that, while the radiologic method has greatly improved diagnostic accuracy in pleuritic disorders, its chief function in most cases is that of confirming the clinical and physical observations. However, there are certain atypical forms of pleurisy: the interlobar, the mediastinal, the paravertebral and the diaphragmatic, which are seldom diagnosed by the physical and clinical signs alone but may be recognized by the radiologic method, provided the proper roentgen technic is used. The roentgen technic consists in the study of the chest in both the anteroposterior and the lateral position. The pathologic processes that may involve the interlobar, mediastinal, paravertebral and diaphragmatic pleurae are the same as elsewhere in the pleura. The roentgen characteristics of dry fibrinous pleurisy depend on the region involved and the extent of the lesion. In the early cases one may find only a dense line corresponding in its position to the interlobar fissure; this is due to thickening of the visceral pleura. In more advanced cases one may find an elongated dense shadow that is more or less oval along the course of an interlobar fissure; this is due to a separation of visceral pleurae as a result of an accumulation of a fibrinous exudate. Frequently one may also find some involvement of the adjacent lung tissue. Abnormal shadows due to mediastinal or paravertebral pleurisy may show in the anterior view of dense shadow, which is usually narrow along the borders of the heart or spine. In the lateral position of the chest the abnormal shadow will be found to overlap the heart or spine, or both, depending on the extent of the area involved. In diaphragmatic pleurisy the diaphragm is found elevated and its outline is more or less irregular as a result of a fibrinous deposit. The symptoms and signs of dry pleurisy are the following: moderate indisposition, dry cough, slight elevation of temperature, little change in the respiratory and the pulse rate, moderate leukocytosis and no abnormal physical conditions (but, if present, they are not characteristic of any pleuropulmonary disease). With the exception of

diaphragmatic pleurisy, there is no pain the chest. Such observations should lead the physician to suspect the presence of an atypical dry pleurisy.

UROGRAPHY AS GUIDE TO SURGICAL INDICA- TIONS OF DIVERTICULA OF URINARY BLADDER

From the standpoint of the surgical indications, Robert H. Herbst, Chicago (Journal A. M. A., Jan. 20, 1934), believes that diverticula of the urinary bladder should be classified into (1) small neck retention diverticula and (2) large neck nonretention diverticula. The retention types are found more commonly associated with fibrosis and bar formation at the bladder neck. The less common nonretention types are usually found associated with prostatic hypertrophy. The mechanism in the development of each variety is quite different. The powerful contractions of the small thick walled bladder stimulated by infection causes severe increased intracystic pressure, which may result in the formation of small orifice retention diverticula and serious renal damage from ureteral reflux. This mechanism is demonstrated both in animal experiments and in clinical cases. The roentgenologic study is of great value both in diagnosis and as a guide to surgical indications. Small and even moderate size nonretention diverticula do not require surgical attack other than the correction of the obstruction at the neck of the bladder. Practically all retention diverticula must be removed if one may hope to obtain a good functional result. Early correction of the milder forms of obstruction of the neck of the bladder, such as fibrosis and median bar, may prevent formation of diverticula of the bladder and serious renal damage.

PRESENT STATUS OF BIOPSY

A. B. McGraw and F. W. Hartman, Detroit (Journal A. M. A., Oct., 14, 1933), state that a consideration of the interrelationships of the various aspects of the question of biopsy on which they have dwelt indicates clearly the ideal conditions under which they may be obtained, namely, the tumor clinic, operating either as a separate hospital or as a complete unit of a general hospital in which the surgeon, pathologists and radiologists, backed by optimal equipment and freed to some extent from encumbrances of other work, may cooperate to give patients by far their best chance of a cure. At present, owing to the prohibitive expense of complete equipment, these ideal conditions exist in so few places that they are available to a relatively small proportion of all patients with cancer. Further consideration also suggests that there are enough hospitals with adequately trained pathologists, surgeons and radiologists sufficiently accessible by modern methods of transportation to offer to a high proportion of patients with cancer, quick biopsy, adequate surgical treatment and, for many, adequate irradiation treatment. Where such facilities exist there is little excuse for making use of a delayed biopsy. There remain, however, far too many patients with cancer living where such facilities do not exist to disparage or condemn entirely the delayed biopsy. Its field of usefulness however, is limited, and it should never be restored to merely for the sake of establishing a diagnosis; i. e., never, without some plan for treatment mapped out by the physician and accepted in advance by the patient, should the diagnosis indicate a malignant condition.

ABSTRACTS «» REVIEWS «» COMMENTS AND CORRESPONDENCE

TUBERCULOSIS

Edited By

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The Treatment of Tuberculosis Cavities of the Lung.
L. S. T. Barrell, *Lancet*, February 18, 1934.

The three stages of tuberculosis of the lung are infiltration, caseation and excavation. Prognosis depends on the degree of activity and not on the presence or absence of cavities. An acute tuberculous bronchopneumonia without cavity may have a worse prognosis than third-stage disease with cavity.

Clinically three types of cavity are recognized: (1.) The recent cavity with a ragged wall of necrotic tissue; (2.) the cavity lined with a fibrotic wall, but containing pus; and (3.) the dry cavity with a firm fibrotic wall. The so-called roentgenographic annular shadows must be considered cavities until proved otherwise. The presence of such a shadow in the absence of clinical symptoms and physical signs is not an indication for collapse therapy. The dry cavity with firm fibrotic wall does not respond well to collapse therapy and these cases do very well without such treatment. Experience teaches that life is prolonged by artificial pneumothorax in the early infiltrative and subacute fibrocaceous stages of tuberculosis of the lung, but that it is shortened by pneumothorax in the chronic fibrotic stage. The presence of a free pleura cannot be determined by X-ray and the only reliable test is needle-puncture. When pneumothorax is inapplicable, sand-bags on the chest should be used to supplement bed-rest. A weight of 40 pounds is not uncommon, and in one case the weight reached 82 pounds, applied at short intervals.

Conclusions: 1. A tuberculous cavity in the lung is a potential danger. The danger may be great or small.

2. Treatment of a cavity is not without danger, which is slight in some cases, great in others.

3. The patient should not be exposed to treatment which is more dangerous than the cavity.

4. The annular shadow often shown by radiosopic examination of tuberculous lungs is probably due to a cavity in the majority of cases. In the absence of any symptoms or signs other than those of radioscopy, this type of cavity is not an indication for any special treatment.

5. A dry cavity in a chronic fibrotic case is best treated by the same means as a chronic fibrotic case without cavity. Attempts to close the cavity by pneumothorax or thoracoplasty are usually unsuccessful and often shortens the life of the patient.

6. When a cavity is accompanied by much expectoration, special treatment is indicated, because the disease is very likely to spread and the prognosis is bad. Artificial pneumothorax should be tried first, and adhesions divided if necessary. Failing this, phrenic avulsion and thoracoplasty or apicolysis may be tried, but, if these methods are contraindicated, the lung should be rested by the application of sand bags

to the chest wall. Apicolysis is more successful than a partial thoracoplasty.

7. In the acute case with cavity-formation, artificial pneumothorax is the best treatment. Failing this, the lung should be rested by sand bags. Phrenic avulsion and thoracoplasty are contraindicated.

The Differential Diagnosis of Intestinal Tuberculosis.
Harry Gauss, I. Singerman, and Louisa T. Black.
American Rev. of Tuberculosis, Nov., 1933.

In this article the diagnostic problems are concerned only with intestinal tuberculosis as a manifest disease, and makes no attempt to include those many cases which are symptomless, in so far as the gastrointestinal tract is concerned, although demonstrable lesions are evident postmortem.

In considering the direct diagnosis of intestinal tuberculosis the authors call attention to the fact that the underlying pathology is an ulcerative enterocolitis and that the physiological response to such a pathological lesion is increased irritability of the small and large bowel and that any increased irritability is manifested by hypermotility. Hence, one of the most important and constant symptoms is a diarrhea with soft and unformed stools, often liquid and which may contain blood, pus or mucus.

The second most valuable and constant symptom is the abdominal pain, tenderness and rigidity which usually come on shortly after eating. This is pointed out as unquestionably the result of peritoneal irritation following on the ulcerative processes within the lumen of the bowel.

Certain constitutional signs result which are in excess to those explainable by the pulmonary lesion itself. These consist chiefly of elevation of temperature, leucocytosis, and certain digestive symptoms, as anorexia, nausea and cramps. After a careful evaluation of the afore mentioned signs and symptoms the X-ray becomes a most important single agent in establishing the diagnosis. The X-ray evidences are discussed in detail along with accompanying X-ray illustrations.

Finally, in summarizing, the authors conclude:

1. There are no pathognomonic signs in intestinal tuberculosis.

2. The high incidence of intestinal tuberculosis reported by pathologists includes a considerable number of terminal lesions and is to be differentiated from clinical tuberculosis which produces morbidity.

3. The common symptoms of intestinal tuberculosis are, diarrhea, abdominal pain, abdominal tenderness, abdominal rigidity and cramps after eating.

4. The diagnosis is suggested by the failure of any patient to make satisfactory progress when his pulmonary lesion is quiescent or improved.

5. The X-ray evidence of intestinal tuberculosis includes the presence of spastic filling defects in the ascending colon, hastened emptying time of the colon, dilatation and segmentation of the small intestine, iliac stasis, gastric retention.

6. When a person has some of the signs and symp-

toms and has some of the X-ray evidence mentioned, and is known to have pulmonary tuberculosis, then a clinical diagnosis of intestinal tuberculosis may be made.

7. However, in adults, in the absence of pulmonary tuberculosis, one would hesitate to diagnose intestinal tuberculosis.

8. In considering intestinal tuberculosis, it must not be forgotten that patients with advanced pulmonary lesions are susceptible to any and all of the various non-tuberculous conditions which are discussed in detail in differentiation.

9. In the authors' series of cases, intestinal tuberculosis was found principally in patients with far advanced pulmonary tuberculosis.

Conservatism, The Keynote in the Treatment of Tuberculosis. C. H. Cocke, *Annals of Internal Medicine*, December, 1933.

In this very excellent article the author first attempts to emphasize the fact that each case of pulmonary tuberculosis is an individual problem and that a thorough study from a diagnostic standpoint, followed by a critical analysis of the progress as observed over varying periods of time, must necessarily precede subsequent steps which are to be taken with a view of aiding nature in its ultimate arrest of the disease process.

As the author states, it is infinitely more important what the tuberculous patient does than where he does it. In reviewing and discussing the various mechanical means which are being more frequently employed, the author insists that the basic fundamental in the treatment is rest. The author beautifully points out the fact, well known to most phthisiotherapists, that an individual prognosis made with statistical data for its background only too often fails. At any time in the course of treatment of the various stages of tuberculosis from the incipient early activation, certain complications may arise to alter the course of pulmonary disease. With measures at hand and a decision as to which one to employ there may then arise certain unexpected difficulties which may cause a change in the plan of treatment. Questions that are continually arising may be wisely answered and competently acted upon only after thorough consideration of the acuteness of the infection, the period of known exposure or the massiveness of the infection, response to hygienic-dietetic measures alone, the presence or absence of cavities, the position and anatomical characteristics of these cavities and numerous other considerations which bear on the indications for institution of collapse therapy. Should collapse therapy be decided upon, the question then is not an easy one, for it then must be decided which of the various means is most applicable to the case at hand.

The whole of this article, when carefully read and studied, constitutes a most comprehensive survey of the problems which are met with in the general management of all stages of pulmonary tuberculosis.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D.
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Intracapsular Fractures of the Hip. A New Device for Lateral Osteosynthesis. Myron O. Henry. *J. Bone & Joint Surgery*. Vol. XVI, No. 1, Jan., 1934.

A rustless steel screw bolt has been devised for use in open reduction of intracapsular fractures of the neck of the femur and the author recognizes it as an

improvement over other forms of fixation such as the Smith-Petersen nail. He makes moderate traction to both lower extremities of the patient upon an orthopedic table. Through a long lateral incision the trochanter is exposed. A Gigli saw is passed through the trochanteric fossa beneath the tendons of the obturator piriformis muscles. The trochanter is sawed off along the insertion of the gluteus medius tendon and retracted upward. When the capsule of the hip is incised, this approach gives a good view of the femoral head and neck along the axis of the neck. Interposed soft parts can be removed and the fragments brought into apposition by the screw traction of the table. The head of the femur is steadied by a tenaculum forceps, while a hole is drilled accurately into it along the axis of the neck. The screw-bolt is then introduced and drawn up tightly to secure efficient fixation. The capsule is sutured, the trochanter sutured and the fascia and skin closed in the usual manner. No external immobilization is needed, and the device can be removed through a small lateral incision when desired.

Since the author has tried this screw on only three cases it does not seem this would fully approve the efficiency of the device but Smith-Petersen has used a three cornered nail and other surgeons including Hey Groves of England have used metal fixation in selected cases. Most orthopedic surgeons think operative fixation is preferable to external fixation by plaster cases or splints.

The Cystine Content of the Finger Nails in Arthritis. M. X. Sullivan and W. C. Hess. *Washington, D.C. J. Bone & Joint Surgery*, Vol. XVI, No. 1, Jan., 1934.

This is a rather unusual article in which the clippings of finger nails were examined for the cystine content. The author found that by applying the Sullivan cystine method to different materials, i.e., food-stuffs, hormones, enzymes, etc., that the cystine content of the finger-nail clippings of six normal individuals varied from 11 to 13 per cent, with an average of 12, while one arthritic, diagnosed by his physician as a case of infectious arthritis, showed only 8.87 per cent.

On account of this variation in the finger nails of an arthritic, the authors studied 26 normal cases and 103 arthritics by analyzing the finger-nail clippings to determine the cystine content. Their procedure of analysis is as follows:

50 to 100 milligrams of finger-nail clippings were placed in a small acetylation flask, fitted with a ground-glass reflux condenser, together with 5 c.c. of 20 per cent hydrochloric acid. They give other details of their procedure which is quite intricate and should be studied in the original article by one who is interested. The cystine was determined by the Sullivan colorimetric method and they found that normal individuals varied from 10.28 to 13.02 per cent with an average of 11.69 per cent. The arthritics varied from 7.20 to 13.11 with an average of 9.77 per cent. 22 per cent of the arthritics showed below 9 per cent cystine and 57 per cent showed below 10 per cent. The lowest normal gave 10.28 per cent cystine.

Acting on the theory that injurious material react with sulphur was present in the arthritic economy, six cases with low cystine content in the finger nails were given a sulphur therapy in the form of intragluteal and intravenous injections of "sulfur-diasporal." All but one of the six cases gave an increase in nail cystine as a result of the sulphur therapy.

Their deductions are that in the majority of the

arthritic cases the low cystine content of the finger nails seems to imply an intoxication factor which draws on the sulphur complexes as, for example, glutathione, and thus diverts the sulphur from its normal channels which would lead to a finger nail containing at least 11 per cent cystine. The increase of the cystine content of the finger nails of a number of cases of arthritis, after injection of sulphur, implies that the sulphur directly or indirectly, after change by the body, combines with the injurious material and thus spares the normal body sulphur complexes from being diverted.

Some other articles of interest contained in the January, 1934, issue of The Journal of Bone and Joint Surgery, Vol. XVI., No. 1, are as follows:

"The Extent of Skeletal Change After Amputation," by T. Wingate Todd, F.R.C.S. and C. C. Barber, M.A., M.D., Cleveland, Ohio.

"Correction of Severe Equinus Deformity," by Leo Mayer, M.D., New York City.

"The Treatment of Fractures and Fracture Dislocations of the Spine," by R. Watson Jones, B.Sc., M. CH. ORTH., F.R.C.S., Liverpool, England.

"Treatment of Fractures of the Upper End of the Humerus," by Nelson J. Howard, M.D. and Leo Eloesser, M.D., San Francisco, Calif.

DERMATOLOGY, X-RAY AND RADIUM THERAPY

Edited by William E. Eastland, M.D.
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Granuloma Coccidioides (Further Observations on the Use of Antimony and Potassium Tartrate and the Roentgen Rays in Treatment; Report of an Additional Case). C. C. Tomlinson, M.D., and Paul Bancroft, M.S., Omaha, Journal American Medical Association, Vol. 102, Jan. 6, 1934.

The purpose of presenting this subject by the authors was that of giving further evidence in support of the use of antimony and potassium combined with roentgen therapy for the treatment of granuloma coccidioides. Although this disease is comparatively rare, the incidence is greater than usually considered.

There are two cases presented in which the above mentioned drug and X-ray treatments were given with very good results. This adds to the sum total of cases treated in this manner. In the discussion that followed the reading of this paper, the use of colloidal copper was mentioned, but it seems to be somewhat inferior to the antimony.

Dr. Howard Morrow of San Francisco brought out the idea that the patient's resistance to the organisms determines a great deal the outcome of the case. Dr. Fred Weidman called attention to at least three different types of organisms causing this disease, and thereby demonstrating a variation in severity depending upon which organism was present.

Irradiation Therapy in Cancer of the Mouth: Technic and Results, G. E. Pfahler, M.D., Sc. D., and J. H. Vastine, M.D., Philadelphia, Radiology, Vol. XXII, No. 1, January, 1934.

The startling statement that "cancer of the mouth is now curable in the great majority of cases if treated early" heads this article. This is particularly of value in that the senior author of this essay is recognized

as one of the leading radiotherapists in this country. A review of 396 unselected cases is made in which the evolutionary stages of treatment are considered, dating back to 1904.

In regard to technic it is mentioned that a heavy filtering of radium is very essential in order that gamma rays of radium can be utilized, thereby allowing a very large dose of radiation without any untoward sequela. The technic involves both radiation from inside the mouth giving from 1500 to 3000 milligram hours, and outside of the mouth in which 30,000 to 60,000 milligram hours are used, covering a period of three or four weeks. The essayists very carefully consider the different locations in the mouth, calling attention to the variations of radiosensitivity of tissues at different locations. It is brought out that the newer conception of technic has improved the five-year cures in unselected cases from 29.3 to 39.2.

Again the fact is emphasized that treatment is necessarily early, as is true in all cancer. In fact, the authors believe that 50 to 75 per cent of mouth cancers can be cured if patients are seen and diagnosed early and then treated by skillful irradiation.

The Roentgen-Ray Treatment of Inoperable Carcinoma of the Breast by the Method of Multiple Converging Beams, Eugene T. Leddy, M.D., Rochester, Radiology, Vol. XXII, No. 1, January, 1934.

Inoperable carcinoma of the breast is a condition that is very common since cancer has been on the increase. Such patients are entitled to any relief that can be given them; hence, the development of a technic of radiotherapy to the best advantage is worthy of considerable research and study as brought out by the author.

Leddy had three different variations in technic which are given in detail in this article, but his final conclusions in this respect show that he regards 135 kilovolts preferable to 200 kilovolts, believing that a reduction in the incidence of pneumonitis is obtained. This consideration is a moot question as there are other radiotherapists of equal rating who believe the lung tissue is not sufficiently injured to jeopardize reducing the voltage and improvement that would thereby result.

Aside from this technical question, he brings out the idea of multiple small areas of treatments which allow such radiation over a large area that eliminates to a major degree X-ray sickness. Sufficient relief can be obtained that the patient should be afforded an opportunity to choose this method of therapy.

The "Seeds" of Warts, Edward F. Corson, M.D., Philadelphia, The Urologic and Cutaneous Review, February, 1934.

In a very short article the author brings out an example to facilitate the diagnosis of warts. Commonplace as this condition may seem it is not unusual for many able men to stumble over such a simple thing when the lesion is located on a pressure bearing area, such as the plantar surface of the foot. Instead of the outward proliferation of tissue the pressure causes a lateral and inward extension of the growth.

It is Corson's idea that text books have overlooked one of the most pathognomonic factors in dealing with verrucae. His point is that when a lesion is shaved off superficially there are papillae seen as radiating brown structures which show up clearly against the ground-glass-like appearance of the rest of the foot. He further states that these brown or black-

ish specks may be the real diagnostic features which enable the examiner to differentiate it from a callous or corn.

The author states that the cause of this pigmentation or color has not been satisfactorily explained but is probably due to highly distended blood spaces largely filled by hematogenous hyalin. With such a picture Corson suggests that more accurate differential diagnosis can be made.

EYE, EAR, NOSE and THROAT

Edited by Marvin D. Henley, M.D.
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Cycloplegia for Diagnosis. Edward Jackson, M.D., Denver. *Archives of Ophthalmology*, January, 1934.

In a very thorough and scholarly manner the author reviews the historical literature of cycloplegia and tells why it is a valuable diagnostic adjunct when properly used. Cycloplegics are used therapeutically but their chief use is in diagnosis. As the ciliary muscle and its function of accommodation became better understood it was found that those drugs which dilated the pupil also paralyzed this muscle temporarily. These drugs assumed greater importance with the realization of the part that accommodation plays in modifying and concealing ametropia. Formerly the entire drug was used but now its alkaloid gives us the exact amount required and used to produce the desired result. This is a disabling procedure with an accompanying inconvenience to the patient and the ophthalmologist should understand the action thoroughly so that this shall be reduced to a minimum. We must keep in mind when using these for diagnosis that all cycloplegics are also mydriatics and the difference in ocular refraction between the contracted and dilated pupil. The error of refraction is measured with the eye completely at rest and this is necessary if glasses are to be prescribed which will give the patient the maximum amount of comfort and the minimal exertion for the eyes. The aberrature must be taken into consideration. A pupil with a diameter of 4 mm. usually gives a uniform refraction even if regular astigmatism is present. However, when the pupil is fully dilated the outermost part differs in refractive error from that of the central zone. A pupil of twice the diameter mentioned above admits four times as much light, three-fourths of which comes in the peripheral zone. Light passing through the peripheral zone focuses to form an image but not with as much distinctness as that in the central or visual zone. Ordinarily the visual zone is the one which must be refracted correctly to prevent eye strain. If some part of the peripheral zone has a decided, regular astigmatism, the meridians of which do not conform to those of the visual zone then the choice of lenses may be considerably affected. Our postmydriatic test may show a different axis than that obtained during cycloplegia. The linear shadow of regular astigmatism and the revolving triangles of shadow or light due to conical cornea were not very fully explained when first observed with a retinoscope. The proper instillation of a cycloplegic requires as much skill and care as any of the other services the ophthalmologist gives his patient. It should not be dropped on the upper edge of the cornea and allowed to spread over the entire cornea before it is wiped away by the lid or secretions of the conjunctival sac. The portion placed on the conjunctiva is absorbed by the veins into the general circulation and reaches the aqueous humor and the intra-ocular muscles in this fashion. If they

are applied in manner proper for diseases of the conjunctiva they will have little effect on the ciliary muscle. An effective method of application is by means of gelatin disks placed above and out from the corneal limbus. Some oculists use atropine in children and homatropine in adults on the theory that accommodation is stronger and harder to overcome in early life. The cross-cylinder as used by Jackson detects and measures changes in astigmatism and so eliminates the necessity of frequent cycloplegia.

Intracranial Complications Appearing During the Treatment of Ear and Nose Diseases. Dr. Ernest Reeves, Passaic, N. J. *The Laryngoscope*, December, 1933.

Intracranial signs and symptoms appearing during the course of treatment of an apparently common infection or after a classical operation on the ear or nose brings warranted alarm not only to the attending physician but to the patient as well. It is a difficult situation and calls for all the facilities of the laboratory of a first class hospital in addition to mature surgical judgment to arrive at a correct differential diagnosis. A mistaken diagnosis of brain abscess may subject the patient to an unnecessary operation with a subsequent infection of the coverings of the brain or of the brain itself. An undiagnosed brain abscess may rupture and cause death by a spread of the infection. Reeves states that a great portion of meningeal complications and one-third of all brain abscesses are caused by sinus thrombosis. Any symptoms which cause us to note sinus complications are valuable in determining the site of operation. Five cases are reported in great detail as to history, physical examination, hematology, spinal canal contents, roentgenograms and other important diagnostic aids such as the Tobey-Ayres test, etc. If an operation was done the findings and the daily progress of the patient are also included. Case one showed a positive Tobey-Ayres test without any visible sinus thrombosis and no definite signs of brain abscess but a brain abscess was discovered at operation. This sequence of events is quite unusual. Case two, having been sent there with a diagnosis of suspected brain abscess, was examined by many competent otologists as well as other medical men in one of the best hospitals in the country, did not show sufficient symptoms to warrant surgical interference at that time and it was almost three months before he came to operation. The interesting point in connection with this case is the long so-called latent period. Case three was one of meningitis in which a radical mastoid was done and all necrotic bone removed including that around the labyrinth which showed signs of necrosis and leaving open with a drain in place. This was a conservative method of treating the meningitis by removing the bony foci of infection. Case four was one of suggested meningitis with a probable brain abscess in which all the symptoms, both local and general, seemed to point to a brain abscess. When a radical mastoid was done and the dura exposed it was found that the cholesteatoma had destroyed all bone. Pressure from the cholesteatoma and meningitis explained all the signs and symptoms found. It is in this type of case that it is difficult to keep from probing and exploring for an abscess when the dura lies exposed. When pathology, other than brain abscess, is found at operation that may possibly explain the symptoms, the author follows the conservative plan and does not enter the brain. He believes in the radical removal of all infected bone but if the dura then looks healthy he awaits developments. The last case is one of acute frontal sinusitis and ethmoiditis with signs of brain abscess such as neck rigidity,

Kernig, one-sided clonus, convulsions and paresis in which there was no brain abscess.

Fulminating Laryngo-Tracheo-Bronchitis. Lyman Richards, M.D., Boston. *Annals of Otolaryngology, Rhinology and Laryngology*, December, 1933.

The seriousness of fulminating laryngo-tracheo-bronchitis and the inadequateness of the treatment necessitates a true understanding of the pathognomy so that a correct prognosis may be given. Foreign body, diphtheria and acute infectious laryngitis are the three main conditions which cause upper respiratory obstruction. When the first two have been ruled out and the treatment for spasmodic croup has failed to relieve the obstruction an accurate diagnosis is made only by direct laryngoscopy. In certain milder types, if the crusts are removed and an intubation tube inserted, an open airway is assured but demands constant watching to see that the tube is not coughed up. Many times the patient will refuse liquids with the intubation tube in place and hypodermoclysis and other methods must be resorted to in order to insure a high fluid intake. This treatment at times gives only temporary relief and when not entirely successful if a tracheotomy is done little benefit is received since the crusts have formed in the lower trachea. At this location it is impossible to relieve laryngeal obstruction except by mechanical removal of the crusts with suction or forceps by bronchoscopy. If this fails the patient will die of suffocation. Since repeated bronchoscopies are necessary because of constantly reforming crusts a tracheotomic bronchoscopy is performed with less difficulty to the patient and physician than when done through the larynx. Other laryngologists whose cases are discussed in this article do not approve of intubation because in fulminating tracheo-bronchitis this treatment alone rarely proves satisfactory since one or more tracheotomies (as high as seventeen in one case) is usually necessary and if the intubation tube remains in place there is great danger of laryngeal ulceration and following stenosis. Tracheotomy is given first choice and should be performed early. Some differ in opinion regarding the type of incision but the incision should always be "low" through the third and fourth tracheal ring. Due to the absolute need of an adequate airway a modified tracheal opening is an advantage and by using the so-called punch tracheotomy of Mosher the introduction of the bronchoscope in numerous bronchoscopies is made easier. The value of a definite solvent is still doubtful but a sodium bicarbonate solution instilled regularly into the tracheal cannula seemed to soften the secretions, adrenalin is recommended by Gittins in like manner and antistreptococcus serum has been tried. If a serum can be found to match the strain of the particular streptococcus in any given case a greater advancement than now seems possible will have been made toward the recovery from this disease. Three case histories are given and the most recent in complete detail. The therapeutic measures in this article were minutely carried out, in the latter case, and the fulminating infection was overcome but the patient "died suddenly from an unknown cause." Throughout this entire paper the author makes it clear that to cope with this disease successfully a correct diagnosis must be made early and drastic measures quickly taken.

Should Fusospirochetal Infections Be Treated With Arsenicals? David T. Smith, M.D., Durham, N. C. *Archives of Otolaryngology*, December, 1933.

Smith believes that this group of anaerobic organisms under certain conditions has a primary pathogenicity and that the infection as a general rule is best treated, locally and constitutionally, with arsenic in some form. Some case reports are given in detail which illustrates his contention. An excellent extensive bibliography which includes many American and European writers is appended. Beneath the tartar in many healthy mouths are found spirochetes, fusiform bacilli, vibrios and cocci but this cannot be used as evidence against their pathogenicity since admitted pathogenic organisms such as pneumococci, meningococci, diphtheria bacilli and hemolytic streptococci are known to live as saprophytes in the mouth and nasopharynx. Some recognized authorities state that most of these fusospirochetal infections will clear up with a simple treatment or no treatment at all and the author replies that so do measles, pertussis, follicular tonsillitis in most cases and even diphtheria in many cases. Most cases of staphylococcal and streptococcal cellulitis following trauma are self limited. Some of the dangerous complications of fusospirochetal infections mentioned are: (1.) Extension into the soft tissues of the neck with the formation of a fatal Ludwig's angina; (2.) fatal hemorrhage after Vincent's angina; (3.) following submucosa resection; (4.) extension of the infection into the lungs. These organisms are usually more numerous in the mouths of syphilitic patients while receiving mercury. Inflammation of the gums subsides rapidly and the number of organisms decrease when intravenous arsenicals are given. It is possible for the spirochetes to become arsenic-fast and for an acute Vincent's angina to develop while the patient is receiving intravenous arsenicals. Discontinuation of the arsenicals and giving intravenously antimony and potassium tartrate usually produce a rapid recovery. This preparation is widely used in South America for nonsyphilitic spirochetal infections. An instance of severe Vincent's angina in a girl, age two, is shown where the child grew progressively worse over a period of five days in spite of local treatment but responded promptly to intramuscular injections of sulpharsphenamine. Improvement was shown in the first twenty-four hours after the initial injection. A man, age thirty-five, with a chronic fusospirochetal infection of the larynx of four months duration cleared up with intravenous neoarsphenamine. A white woman, age thirty-nine, with a chronic trench mouth and a husky voice for the three previous months recovered with intramuscular sulpharsphenamine. Vincent's infection in Avitaminosis in a negress, age twenty-one, was controlled after about seventeen or eighteen days of intravenous medication. In 940 cases of pulmonary abscess collected from American literature in which only general medical care was given, 40% died. Eleven of fifteen cases reported by one man and thirteen of fourteen cases of another writer recovered with arsenical therapy in addition to general medical care. Chronic abscesses of several months duration do not respond so well to this form of treatment but the patient is made a better operative risk. Postoperative pulmonary infections which show fusospirochetal organisms should be treated promptly with intravenous arsenicals. It is emphasized that this is not a harmless procedure as there are at times fatal reactions to the administration of the drug. Repeated small doses at intervals of a few days are the safest and most efficacious.

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
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Spinal Anesthesia and Neuro-Syphilis (Rachianesthesie et Neuro-Syphilis). Ny Marcel Faure-Beaulieu, Medecin de l'Hopital Saint Antoine, Paris. *La Presse Medicale*, December 16, 1933.

In sum, the author takes the position in this article that spinal anesthesia in a syphilitic may hasten, if not cause, the localization of syphilitic lesions in the central nervous system.

As an example he cites the case of a chauffeur 53 years of age who had definite impairment of function of both anal and vesical spincters immediately following a gastro-enterostomy under spinal anesthesia nine years before he sought advice because of a sudden partial aphasia in October, 1933. During the previous nine years there had been a mixture of retention and relative incontinence of urine, and alvine evacuations were had with extreme difficulty. Added to these difficulties, there was the gradual development of a complete sexual impotence.

The author does not undertake to say that this particular patient might not have had neuro-syphilis even before the spinal anesthesia, but he emphasizes the significance of the first evidence of spincter impairment immediately after the spinal anesthesia, and its persistence.

In the discussion, there is reference to the more or less prolonged anesthesia of the legs and retention of urine after the commonly used anesthetic agents have been injected into the subarachnoid space. In the case of the non-syphilitic the evidences of these accidents disappear after a few days or weeks, but he believes that in patients who have latent syphilis these symptoms may persist and be gradually blended with the symptoms and signs of syphilis of the central nervous system.

LeRoy Long.

Two Important Biologic Factors in Fertility and Sterility. (a.) Is There a Safe Period? (b.) Anovulatory Menstruation as a Possible Cause of Sterility. Emil Novak, M.D., Baltimore, Md. *Journal of the American Medical Association*, February 10, 1934, Volume 102, No. 6.

Particularly in light of the recent intensive interest in the subject of contraception, the author has carefully considered the subject of whether or not there is a "safe period" during the average menstrual cycle in women. He has reviewed the literature upon the subject and presented the information in favor of such a hypothesis and that against it.

He has summarized certain fundamental considerations, the facts about which have changed considerably in recent years. Firstly, it has been shown that most often ovulation occurs at about the 12th to 14th day, practically always between the 8th day and the 20th day of the cycle, that is from the onset of menstruation. Secondly, the life of the ovum after extrusion from the follicle is now considered to be very short, probably not more than a day or so, some believing only a few hours. This is contrary to the older view that the life span of the ovum was probably about two weeks. Thirdly, the question of the length of time the spermatozoa retain their potency after injection into the vaginal canal is now considered to

be only two or three days at most. This, of course, means their capacity to fertilize the ovum. Previously they were considered to retain their potency for many days.

With this outline of the principles governing the precepts of biological birth control, the author has discussed their application and their value.

"Combining the male and female factors, therefore, it would seem that the time at which fertilization can occur is the ovulation phase, plus about three days to allow for the possibility of survival of previously injected spermatozoa, plus perhaps a day or so to allow for the possibility of survival of the ovum."

The author has summarized some of the clinical reports of series of cases in which this principle has been the object of investigation. Most clinical reports have suffered for obvious reasons, such as a lack of precision as to the dates of menstruation and coitus.

He quotes Ogino who states that ovulation occurs from 12 to 16 days before the next menstrual period and that conception is limited to the eight days between the 12th and 19th day before the next period. For the obvious difficulty in the application of this rule in women with cycles other than the common four weekly type, Ogino established a working rule, "The beginning of the eight day 'conception period' he puts at 10 days plus or minus the difference in days between the 28 and the minimal length of the cycle. The end of the dangerous phase he places at 17 days plus or minus the difference between 28 and the maximal length of the cycle."

Knaus, working upon a different test method, states that fertilization always occurs in the period between the 11th and 17th days of the cycle provided it is the usual four weekly type. Both of these writers have clinical reports which bear out their contention.

Novak reports the work of a number of investigators who deny the infallibility of the doctrine laid down by Ogino and Knaus. One of these workers, for example, studied a number of early embryos, and concluded that only 4 of them fell into the period emphasized as the conception phase, that is, the 11th to 17th day. Another holds very strongly that coitus itself may be the determiner of ovulation, as is the case of such animals as the rabbit, in spite of the fact that the usual doctrine is that spontaneous ovulation is the rule in the human female and that it occurs at fairly stated periods.

The most important questionable features of the claims made by those advocating the so-called "safe period" are the following: The statement that conception is absolutely impossible at other times than the "conception period" is certainly open to question, even though this may be the predominant rule. There is still some uncertainty about the length of time that a spermatozoon retains its potency. There also arises the irregularity of the menstrual cycle in certain women which produces natural uncertainty. There, again, is the question of as yet inadequate investigation of some of the possible factors in fertilization.

The author sums up that in women with cycles approximating the four weekly type "there is every reason to believe that the immediate post-menstrual period (up to the 8th day of the cycle) and even more the premenstrual period, (after the 20th day) are almost entirely, though perhaps not absolutely, 'safe periods' for those anxious to avoid conception. In women with irregular cycles the problem is more difficult and less certain, probably depending a good deal upon a scheme such as that suggested by Ogino.

Of equal importance these principles apply to the

optimal time for coitus in those desirous of having children. It is that space of time extending from the 10th to the 18th day of the cycle and especially from the 12th to the 14th day. The author then reviews the subject of the possibility of menstruation without ovulation as a cause of sterility, presenting the clinical and laboratory information for and against this hypothesis. The conclusions drawn are vague, as are the therapeutic measures suggested for employment in those cases of sterility where no pathology of any type is found in either the male or the female.

Comment: While this article was written for the purpose of discussing the biological birth control method in view of the intensive interest today in the field of birth control, the principles involved and the clinical facts known are of tremendous importance in the study of cases of sterility and the therapeutic assistance that can be given these unfortunate women. It is largely for this reason that the article has been carefully abstracted.

—Wendell Long.

A New Sign of Lumbago (Sur un Nouveau Signe du Lumbago). M. le Prof. G. S. Demianoff, Krasnodar, Russia. *La Presse Medicale*, November 22, 1933.

In this article particular attention is given to painful affections of the sacro-lumbalis muscle. (Note: This muscle is intimately blended with the erector spinae which arises from the sacroiliac groove, the lumbo-sacral tendon, the back part of the crest of the ilium and the transverse processes of the sacrum. The erector spinae is continued upward under the name of longissimus dorsi which is attached to the transverse processes of the lumbar and the dorsal vertebrae, and to the 7th, 8th, 9th, 10th and 11th ribs not far from their junction with the spine). The author remarks that the essential function of the sacrolumbalis is to sustain the dorsal spine and to keep it in a straight or normal position. ("la fonction essentielle consiste a soutenir et a redresser l'epine dorsale"). It is reasonable to conclude, therefore, that the sacro-lumbalis muscle ("muscle sacro-lombaire") is visualized by the author as including the erector spinae and its chief component, the longissimus dorsi.

The sign is elicited by two steps or manoeuvres:

1. With the patient in the dorsal position, an attempt is made to flex the extended leg upon the abdomen. If there is lumbago from disease or trauma of the muscular structures (vide supra), flexion is very incomplete, and there is complaint of pain in lower back, due to pull on the sacro-lumbalis by displacement of the posterior pelvis.

2. The pelvis is fixed by pressing heavily with one hand over the anterior superior spinous process of the ilium, while flexion of the extended leg is carried out with the other hand. If the pathology is in the sacro-lumbalis and associated muscles the leg can be flexed to practically a right angle with the body without pain in the back because the pull on the muscles has been prevented by fixing the pelvis.

The author insists that this proposed sign must not be confused with Lasgue's sign in sciatica. When an attempt is made to flex the extended leg in sciatica there is incomplete flexion, and pain along the course of the nerve which is stretched (Lasgue's sign). When an attempt is made to flex the extended leg in the presence of disease or trauma of the sacro-lumbalis there is likewise incomplete flexion, but the pain is in the back and is the result of stretching of the muscles. The second manoeuvre proposed by the author leads to a more definite differentiation, except

in the occasional case where there is coexistence of pathology of back muscles and pathology of the great sciatic nerve.

Comments: The term "lumbago," without qualification, does not convey any definite conception of pathology. At the same time pain in the back, and especially in the lower back, is the chief complaint in the cases of many patients seen by the surgeon. In the investigation of such patients there has been a definite tendency to minimize the complaint if the X-ray negatives of the skeletal structures do not indicate pathology. And yet when one considers the complex and intricate arrangement of muscles, ligaments, tendons, joints, nerves, blood vessels; when one considers potentialities of stress and strain; of blows and twistings and squeezings and contortions—all without X-ray evidence of pathology—one ought to willingly weigh the value of any procedure that might help in the solving of problems too often as baffling as they are important.

—LeRoy Long.

Hypothyroidism—Its Relation to Convalescence Rate and End Result Following Surgery. Henry J. Vandenberg, M.D., Grand Rapids, Michigan. *The American Journal of Surgery*, February, 1934, Page 335.

The surgeon is often asked: "How long will it be after I am operated upon before I am as strong and well as I am going to be?"

Patients with diminished thyroid secretion do not convalesce so rapidly after surgery, other things being normal, as do those who have normal thyroid action. More than that, patients with a so-called high normal thyroid function convalesce rapidly. The author gives case reports which show the effectiveness of the use of thyroid extract in the postoperative management of certain surgical cases. Thyroid administration, when indicated, can be started to advantage almost directly after the operative procedure. It would seem that in elective surgery it might be used to advantage, in given cases, to prepare a patient for the ordeal of the operation.

"No one questions the profound influence of each of the glands of internal secretion and their inter-related action on the body function, and of these, the thyroid gland has been regarded by the author, for a long time, as the master clock of the endocrine system. Its most important function is, perhaps, the generation of the metabolic activity of the body. In other words, the thyroid is in direct charge, as it were, of governing the chemical changes going on continually in living cells, by which the energy is provided for the vital processes and activities. It acts as a continuous charging mechanism. It controls, normalizes, and stimulates the functional processes of all tissues. In fact it is admitted to be the activator of all the body cells—that is, when it functions normally.

At the every beginning of life each organism is charged with an energy potentially sufficient to carry it along for a definitely limited period of time. There is no doubt a considerable variation in the amount of this energy charge in different normal individuals, and the level of this potential force is subject to fluctuation, being elevated, perhaps, through stimulation, or lowered through the influence of extrinsic conditions such as starvation, disease, trauma (operations), and so on. No doubt all of the cells and organs are affected by such conditions, but it seems logical that the cells which are highly specialized in their work, as are those of the thyroid, should be affected to a greater extent and thus exhibit either great-

er stimulation or a reduced function in a correspondingly greater degree. It is well known, for instance, that operation upon any part of the body in the presence of a smoldering thyroid activity may cause an exacerbation of hyperthyroidism in a way and in a degree quite similar to that following operations upon the thyroid itself. Reactions from stimulation such as this do not follow surgery in which the thyroid is normal in its working balance, and surely not if it is subnormal in its action. Quite the contrary, major operations seem to be followed as a rule by a running down of the machinery rather than by an acceleration of it. Whether this running down of the machinery is the result of damage done to the charging mechanism of the body, which seems to be directly under the influence of the thyroid gland, or whether the discharging mechanism under the influence of the adrenal has been speeded up one cannot say with a settled judgment or conviction, but the former is more likely the case.

The degree of hypothyroidism under consideration is, of course, not that of cretinism or myxedema, but what is meant is thyroid secretion that is less than normal. While the surgeon has interested himself very much in the question of hyperthyroidism, and has in fact become very keen in the recognition of the early symptoms and signs of it, he has not as yet become interested in the so-called masked or occult type of hypothyroidism. He has left the subject to the internist to worry about. The complaint of being tired, of having to drive one's self to his tasks, of lack of "pep," may serve as a hint to suspect under-functioning of the thyroid, assuming, of course, that constitutional diseases that may cause such complaints have been ruled out. Moreover, patients with this condition have far too often been placed in the neurasthenic group. As a rule those who have a reduced thyroid function have more or less cold intolerance, the skin is inclined to be dry, the appetite may not be up to normal, there may be indefinite joint pain, constipation and headache are common. The history of lack of energy is to be supplemented, of course, with a physical examination, and in some cases the metabolic rate determination may be helpful. If no signs of hyperthyroidism can be elicited it is safe and good practice, if the history is suggestive of an under-functioning thyroid, to start thyroid feedings under careful checking and observation. For each individual there is a maximum dose which must be found by experiment. The use of desiccated thyroid extract seems to be very effective and practical. The dosage will depend largely upon the degree of deficiency. The metabolic rate estimation will give a rather definite indication of the amount that is needed, yet without it the dosage can be determined from all the clinical data in hand, with enough accuracy for all practical purposes.

The author has demonstrated that in most cases it is well to use 3, 4 even 5 grains daily for two weeks and then to reduce the dosage gradually. In any case the medication must be carefully supervised. In some instances two or three months treatment seems to arouse the thyroid to action so that further administration is not needed. In the majority of cases, however, it has to be given for a number of months, and in some instances it may need be given indefinitely.

He finds that mild hypothyroidism is a very common condition, and its frequency makes it incumbent on the surgeon to have the condition in mind.

In answering the question as to "How long it will be after I am operated on before I am as well as I am going to be?", the author believes that with a lessened function of the thyroid gland a retarded con-

valence rate can be anticipated. Also, a very slow convalescence rate may be the trial test, and therefore, the hint that thyroid medication is needed to supply the energy charge that is lacking. This energy charge will not alone be the means of accelerating the convalescence following surgery, but without it the patient's highest health level will never be attained.

—LeRoy D. Long.

Radiation Therapy in Carcinoma of the Corpus Uteri.
William P. Healy, M.D., New York, N. Y. *American Journal of Obstetrics and Gynecology*, Vol. XXVII, January, 1934, No. 1.

Dr. Healy points out the fact that the greatest number of cases suffering from carcinoma of the uterine body occur in the sixth decade of life. As a consequence, many patients suffer from degenerative lesions associated with advanced age, cardiac and renal disease, arterio-sclerosis, diabetes and obesity. Such lesions occurring in association with carcinoma of the body of the uterus have made it desirable to avoid major surgical procedures if possible.

Though for a long time carcinoma of the uterine body has been considered radio-resistant, because it was a glandular variety of cancer, in these patients who were extremely poor risks for major surgery or in those who declined operation, radio-therapy has been used with benefit and with many apparent cures.

He also recalls the fact that more careful follow up investigations in good hospitals have produced the conviction that hysterectomy alone probably does not give as satisfactory or permanent a cure as we believed.

He reviews the work of Mahle and Ewing in dividing the cases into four different groups or grades according to variation in the histological structure. He recalls Mahle especially recognized the definite relationship existing between histological structure and end result in surgically treated cases. He quotes Mahle, "The postoperative prognosis of a group of patients with adenocarcinoma can be determined by a close study of the cellular differentiation of the carcinoma."

The author then reports 134 patients treated at the Memorial Hospital, dividing them into the four groups, giving a description of the histological structure in each group, the number treated by radiation, radiation and hysterectomy, or hysterectomy alone, and finally, the result in each group.

Grade 1—Papillary adenoma malignum—entirely papillary and as a rule does not tend to infiltrate the myometrium. Fourteen cases in this group. Radiation alone used in three cases. Seven received intra-uterine radium followed in six to ten weeks by hysterectomy. Three patients had hysterectomy followed by X-ray therapy. One received X-ray and radium therapy before and after hysterectomy. All patients are alive and well. It is concluded that one is justified in assuming that this histological type is curable in all cases by adequate radiation therapy or by hysterectomy.

Grade 2—Adenoma malignum—large or giant glands, often greatly elongated, lined by several layers of cuboidal or cylindrical cells—stroma greatly reduced—nuclei of gland cells large, hyperchromatic and stain deeply. Any tendency on the part of the cells to break through into the stroma takes the tumor out of this group and places it in the group of adenocarcinoma.

There were 58 cases in this group. Twenty-seven cases were treated only by radiation. Of these, 74

per cent alive an average duration of life since treatment is 5.3 years. Twenty-one patients were given radiation with intra-uterine radium alone or combined with X-ray, and subsequently in six to ten weeks pan-hysterectomy by the abdominal route was done. Of these, 90½ per cent have survived for an average of 5 years.

Of the entire group of 58 cases of adenoma malignum, grade 2, 84½ per cent are living from 1 to 15 years since treatment. Dr. Healy points out that those treated with radiation alone who died were either in the advanced stage of cancer or had serious medical complications, and treatment was regarded as only palliative.

Grade 3—Adenocarcinoma—histologically characterized by greater malignancy. The cells are more atypical. There is more evidence of anaplasia and the tumor while still maintaining its glandular arrangement, nevertheless infiltrates the stroma and forms solid masses of tumor cells.

In this group 21 patients received only radiation therapy consisting of intra-uterine radium and external X-ray. Of these, 15 are alive and well for an average of four years. The author points out that in nearly every instance radiation was chosen as the method of therapy because the patient was advanced in years or in disease, and was for these or other reasons regarded as a poor surgical risk.

Fourteen patients with adenocarcinoma received radiation therapy before hysterectomy, and 57 per cent of these patients have remained well for an average of five years.

The increased malignant character of this histological group is indicated clinically by the end result for the entire group of adenocarcinoma of 58.7 per cent, as compared to 84.5 per cent for the grade 2, adenoma malignum.

The author points out that the end results obtained in patients with adenocarcinoma treated by radiation alone were superior to those resulting when hysterectomy was combined with radiation, pointing out the fact that cases in this group treated by radiation alone gave a cure percentage about the same as that received in adenoma malignum group with radiation alone—that is, 71.4 per cent and 74 per cent. He makes the observation that it would be reasonable to assume that radiation therapy is equally effective in controlling the disease in both histological types.

Grade 4—Cellular (anaplastic) adenocarcinoma—characterized histologically by diffuse small round and polyhedral cells often entirely lacking in glandular arrangement. The cells may be closely packed together, stroma scanty, mitotic figures numerous and marked evidence of anaplasia.

In this group there were eight patients. Two of these were treated by intra-uterine radium, both remaining well and free of evidence of recurrence for two and seven years respectively. Three patients treated with radiation before hysterectomy are all alive, but one of them now has clinical and X-ray evidence of chest metastasis.

The author also reports eight cases of adenoacanthoma, a distinct histological variety of corpus cancer. Of these, all are alive except one who died from an undetermined cause two months after hysterectomy.

In summarizing the results of these 134 cases the following points are of interest: There was no mortality associated with either radiation therapy or hysterectomy. The treatment in all of these cases, though representing different plans, is always based upon radi-

ation or hysterectomy, alone or in combination. One hundred per cent of all the grade 1 patients and 87.5 per cent of the grade 2 patients are alive regardless of the plan of treatment followed. In other words, regardless of the treatment, be it radiation or hysterectomy, in these two groups the result will be good. Sixty-three per cent of the patients with adenocarcinoma are alive. The author's conclusions follow: He feels it highly significant that patients with adenocarcinoma of the corpus in which radiation was used in full doses, either alone or some weeks before hysterectomy, have remained free from recurrence or metastatic disease, and have lived longer than those patients with adenocarcinoma of the corpus treated by hysterectomy before radiation, or hysterectomy alone. Because of the tremendous prognostic value of histological grading in this type of cancer, a very early report of the curettage specimen is quite desirable. Dr. Healy concludes that the patient is best treated by instituting full treatment with intra-uterine radium, and if feasible, deep X-ray therapy previous to hysterectomy, delaying operation from four to six weeks following radiation. He also feels that postoperative radiation with the radium applied in capsules in the vaginal tube and X-ray externally should be used from eight to twelve weeks after hysterectomy in cases of adenocarcinoma.

The author then gives a brief description of the technic used at the Memorial Hospital in cases of this kind, which can be read more carefully in the original article if desired.

Comment: Dr. Healy is a very capable gynecologist, and has done much valuable work in the field of uterine cancer at the Memorial Hospital. This report is a very valuable one as indicating the utility of radio-therapy in what was considered until not very long ago a radio-resistant type of tumor. It serves, in essential details to corroborate the former reports from the Radium-Hemmet, in Stockholm, made by Dr. Heyman.

It is to be remembered, however, that the end result in all groups of adenocarcinoma of the uterine body treated by complete panhysterectomy in good hands has yielded a five year cure rate of from 60 to 70 per cent. The combination of pre-operative radiation therapy may prove to be a valuable adjunct, and slightly increase the cure rate of this disease in the operable cases. It is possible for one reading this article to assume a greater importance attached to radiation than Dr. Healy really feels, because by personal communication with him I know that he still feels the hysterectomy is the procedure of choice, but that it is probably better to use pre-operative radiation.

The most valuable part of this work, and that of Heyman in Stockholm, is the proof that in those cases who are too poor a surgical risk or too advanced in the disease to allow surgery, one may use radiation with considerable hope of cure.

—Wendell Long.

Treatment of Operative Shock by Fresh Embryonic Juices (*Traitement du Choc Operatoire par les Sucs Embryonnaires Frais*). Victor Pauchet, Pierre Rosenthal and Henri Bertroux. *La Presse Medicale*, Jan. 6, 1934.

This is a report made at a meeting of the Academy of Sciences, Paris, December 4, 1933. The following notes are based upon an abstract made by J. Couturat:

The employment of embryonic juice as a treatment for surgical shock followed experiments by Rosenthal. Embryonic juice is not used by injection into blood

vessels or tissues, but the active principles are quickly absorbed by way of the mucosa of mouth, nose, vagina and especially the rectum.

Aqueous extracts of the tissues and organs of embryos of any animal are suitable. It is claimed that they contain principles which exert a stimulating and cytogenic influence upon animal cells. The exact mode of action is uncertain. Apparently an incidental phenomenon is the increased output of urine supposedly due to direct action upon the kidneys.

The reporters advise the contents of a 100 c.c. ampoule per rectum each day for two days before operation as a preparatory or prophylactic measure (presumably only in patients where shock is feared). If there is shock during the operation 100 c.c. per rectum. This repeated every 3, 6 or 12 hours as a curative measure.

The treatment is of interest to the reporters because of its rapidity of action, the simplicity of the mode of administration and its harmlessness. ("En somme, le traitement du choc operatoire par les sucs embryonnaires est interessant par la rapidite de son action, la simplicité de son mode d'administration et son innocuite").

—LeRoy Long.

Treatment of Ankylosing Polyarthritis by Resection or Arthroplasty of Certain Joints (Essai de Traitement par la Resection ou L' Arthroplastie de Certaines Localizations de la Polyarthrite Ankylosante). Rene Leriche and Adolphe Jung, Strasbourg. La Presse Medicale, November 5, 1932.

The above translation of the title of this article is extremely free, but it is believed that it is a fair indication of the plan of treatment proposed.

It is remarked that while arthroplasty has been employed often in the relief of monoarticular ankylosis with deformity, practically nothing has been done in an operative way to improve or restore function in the case of the unfortunate patient who is the victim of polyarthritis.

The procedure is not advised, of course, in the presence of any acute inflammatory process.

An illustrative case is reported: An unmarried woman of 47 had pain, oedema and redness of toes and fingers at the age of 18, quickly followed by a like involvement of one knee and one temporo-maxillary joint. There was soon deformity of the fingers. The involvement of other joints was progressive. At the age of 26 there was ankylosis of both sterno-clavicular joints, then of the right knee. Later the left knee, and after that one elbow. Through the years, the joints became painful, red, swollen, and when these acute symptoms subsided there was often but not always stiffness. For example, treatment seemed to be of great benefit in connection with the temporo-maxillary joints which had good function when patient was admitted to hospital.

Fortunately the spine had not suffered, nor the hips.

The most trying situation was in connection with the knees. The left knee was ankylosed in extension; the right ankylosed in sharp flexion. The patient was not able to walk.

Radiographs showed soft, irregular and abnormal articular surfaces, with almost complete obliteration of the interarticular space.

An arthroplasty was done on the flexed right knee,

a fascia lata graft being placed between the fashioned articular surfaces "en portefeuille." A Kirschner's pin was placed through the inferior part of the tibial epiphysis for traction, and the leg immobilized with the knee in partial flexion. At first there was traction of about five pounds, the next day seven and a half pounds, and a little later around ten pounds. Extension was maintained six weeks, and after that patient was kept in bed three additional weeks.

From the first active movements of the toes were encouraged, and after traction was removed there were active mobilization efforts.

The final result was good extension, voluntary flexion of 80 degrees, some lateral weakness and some difficulty in extending the leg while in a sitting position because of some deficiency of the quadriceps femoris. She was able to stand and walk without pain.

—LeRoy Long.

BOOK REVIEWS

Treatment in General Practice (Second Edition): By Harry Beckman, M.D., Professor of Pharmacology at Marquette University, School of Medicine, Milwaukee, Wisconsin. Second Edition, Revised and Entirely Reset. 889 pages. Philadelphia and London: W. B. Saunders Company, 1934. Cloth \$10.00 net.

Reviewing this book has afforded much pleasure, for the book is well written in the first person and holds one's interest through various convenient classifications of the diseases included within the text. In the preface the author makes it clear that he is acting in the capacity of a careful and sympathetic editor, thus he compiles treatment as found of highest value by well known physicians and also if there is a dissension from those expressed opinions the opposite views are carefully and lucidly set forth, then follows the author's comment from a personal standpoint. It is natural, therefore, that one would expect to see many of the familiar drugs and therapeutic measures again boldly mentioned and still be relieved of the task of reading lists of drugs which have previously been included in so many text books which state that they are of doubtful value but are included in wholesale fashion like unimportant guests at a fashionable gathering, merely as "among those present." The book has not suffered by the shortening of some of the chapters thereby, because it has afforded space in which to mention a dozen or more subjects not included in the first edition. Thus, Acetylsalicylic acid (aspirin) poisoning; agranulocytosis; blackwater fever; hyperinsulinism (hypoglycemia); hypothyroidism without myxedema; serum sensitization and desensitization; simple achlorhydric anemia, and others. A convenient table of vehicles and incompatibilities is also included. The book shows many advantages over a number of volumes on treatment because of the brevity, clarity and literal quotation of statements and reports of authors, thus avoiding a preponderance of bibliography. The book will prove of value to those seeking the best therapeutic measures to employ in a certain case as the best opinions are collected and made readily accessible.

THE JOURNAL

OF THE
OKLAHOMA STATE MEDICAL ASSOCIATION

VOLUME XXVII

McALESTER, OKLAHOMA, APRIL, 1934

NUMBER 4

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OPHTHALMOLOGICAL VERTIGO

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Vertigo is defined by Dorland's medical dictionary as "dizziness; giddiness; disorder of the equilibrating sense, marked by a swimming in the head; a sense of instability and of apparent rotatory movement of the body or of other objects." Buzzard states that "vertigo is sometimes divided into 'general' vertigo and 'special' vertigo. In the latter, objects appear to move, or the patient tends to fall in a definite direction." What he calls special vertigo is often referred to as true vertigo.

In a recent paper Edward Jackson states that "vision has succeeded to the commanding position, among the wide range of functions that are ready to assist in orientation and the maintenance of equilibrium." This is due to space perception obtained from perfected maculae and binocular single vision.

Vertigo is a symptom entirely subjective and we must rely upon the patient's description of his sensations. Vertiginous or dizzy sensations are difficult to describe or define. Many patients go to the ophthalmologist complaining of dizziness, and some state that it is brought on by use of the eyes. With complaints of dizziness the ophthalmologist must keep in mind the whole definition of vertigo, the "general" as well as the "special."

I will attempt to mention the various eye conditions with which the patient complains of dizziness.

GENERAL

Many people complain of dizziness when looking down from a height. This is because visual impressions from nearby objects are absent and their orientation or sense of security is disturbed.

Unconscious movements of the eyes develop in the attempt to follow objects that are continually moving, as, when one looks from a bridge at the water flowing beneath. Then when the gaze falls upon stationary objects they appear to move in the opposite direction. The same thing occurs when the objects are stationary and the man is moving, for example, when he is looking from a moving railway train or an automobile. The resulting dizziness is very annoying to some people.

From false localization or projection everyone when he starts wearing his first pair of glasses is slightly dizzy as he walks about. This soon passes off as he becomes accustomed to his glasses, and only in the case of strong glasses does it happen that some cannot get accustomed to them.

ERRORS OF REFRACTION

In hypermetropia after the patient reads for a long time the print swims and he says he feels dizzy. This disappears on closing the eyes or on looking at a distance.

In astigmatism patients sometimes try to see more clearly by using their accommodation. In doing so they focus on one portion of the letters and then on another as they cannot see all parts of the letters distinctly in any one focus. After doing this for a short time the letters appear to

dance or swim, and the patient says he is dizzy. This disappears on closing the eyes or on looking at a distance.

TRANSIENT OBSCURATIONS

Momentary obscurations occurring in choked disc or optic neuritis are sometimes complained of as dizziness. Similar to this are the complaints of transient dizziness from *muscae volitantes* and a prodromal attack of glaucoma. With scintillating scotoma the patient feels dizzy and sees a sparkling light before his eye which rapidly enlarges until it appears to involve the whole field of vision. Within the scintillating area external objects are invisible. This begins to clear after from fifteen to thirty minutes.

DIPLOPIA

Many patients with heterophoria obtain binocular single vision at the expense of added muscular effort. Frequently when fatigued or when otherwise below par they are unable to overcome their muscular imbalance and this results in diplopia and they therefore feel dizzy. Perhaps the most common example of this is convergence insufficiency in presbyopes. They feel dizzy and objects appear indistinct or blurred. This results from incomplete fusion or from diplopia in which the images overlap. It disappears immediately on closing one or both eyes.

Paralysis of an extra-ocular muscle, incomplete or complete, diminishes or abolishes the excursion of the eye in the field of action of the paralyzed muscle. When the gaze is directed into this field of action of the paralyzed muscle, objects are falsely localized or projected, and appear to move falsely. This is due to the disturbed muscle sense, and results in vertigo or dizziness. If both eyes are open the patient also has diplopia. This vertigo immediately disappears when the paralyzed eye is closed.

Spasm of an extra ocular muscle also produces vertigo by false projection, diplopia, and an apparent movement of objects due to disturbance of the muscle sense. Spasm presents appearances closely resembling those of a paralysis of the associate muscle in the other eye. Vertigo from spasm also disappears when the spastic eye is closed.

NYSTAGMUS

There is no vertigo associated with the ordinary pendulum-like visual nystagmus which originates early in infancy. The pa-

tient is not conscious of his abnormal eye movements, but has become habituated to their movements and has learned to take them into account and overcome false projection.

Nystagmus which develops later in life such as miner's nystagmus, nystagmus originating in the ear, and nystagmus in multiple sclerosis does produce vertigo. This, with the exception of otological vertigo, disappears on closing both eyes, and the otological vertigo is diminished when the eyes are closed.

In summarizing, I wish to state that many patients come to the ophthalmologist complaining of dizziness. This dizziness frequently is not what is often called true vertigo but the patient says he is dizzy and dizziness or vertigo is like headache, entirely subjective, and we must rely upon his description of his sensations. The ophthalmologist must keep in mind the entire, broad definition of vertigo and by a careful history learn the character of the patient's dizziness. Ophthalmological vertigo disappears on closing one or both eyes. Having ascertained that the vertigo is ophthalmological, the eyes must be thoroughly investigated and proper treatment instituted. This treatment, of course, may be in the field of the ophthalmologist, the internist, the neurologist, the otologist or even the allergist.

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VERTIGO FROM THE OTOLOGICAL STANDPOINT

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I shall first give a brief resume of some of our observations on the physiology of the vestibular apparatus. Details of anatomy are boring, unless you are interested in the part, and will therefore be kept at a minimum.

The seventh or static-kinetic sense has as its end organ, the semi-circular canals and the saccule and utricle of the inner ear. The static-kinetic sense is briefly the

ability to compute one's position in space with reference to known stable objects, such as earth, horizon, etc.

The ability to maintain any chosen position, whether it be perpendicular to the earth or parallel to it, depends on the proper functioning of two of three senses, i.e., sight, muscle sense, and a static-kinetic sense.

When one is turned rapidly from left to right with head forward thirty degrees, the endolymph in the right horizontal semi-circular canal moves away from the ampulla and washes the hair cells away from the crista, while in the left horizontal canal, the hair cells are washed upon the crista, producing a stimulation which we are able subjectively to interpret as a change in position. One must, therefore, remember that in using a Barany chair, the resulting vertigo and nystagmus phenomena are produced about 66% by the ear from which one whirls and only 35% from the ear toward which one whirls. In caloric douching, all the phenomena are produced by the stimulated ear. This incidentally is the main reason why the caloric tests have gradually supplanted the Barany chair in testing the vestibule.

As we turn to the right, our eyes will at first lag, then catch up and when we stop will go a little further and return. When this turn is slow enough that we can cerebrate with it and control the movement of our eyes, our static-kinetic sense is functioning properly and our position is known. When we move so fast, as in whirling, that we cannot keep orientated, then we have subjective vertigo and our eyes continue to go past the objects and we have objective nystagmus.

The converse is also true, we may start with nystagmus and get vertigo and its contemporary pallor, sweat and nausea. This is the cause of car sickness. If you will look at the eyes of a person looking out of the window of a rapidly moving train, you will see a beautiful horizontal nystagmus. This is usually within the bounds of normal cerebation, but occasionally gets beyond this and ends with dizziness, nausea, pallor and sweat.

Continued stimulation at intervals finally dulls the sensitivity of these end organs and stops the vertigo. This explains why a pilot in his first spin is unable to get orientated and is therefore unable to perform the proper maneuvers to neutralize the spin. If he spins his ship many

times, he dulls his sensitivity or as he says, "gets used to it," then he has perfect orientation and knows his exact position at all times.

As has been said before, however, he must have some known stable point of reference as the earth or horizon. One can not spin in a fog and come out properly except by instruments. Indeed one cannot tell for sure he is even spinning except by his instruments. Many good pilots have been lost because they believed their ears instead of their instruments when there was no visibility.

Again by vertigo, we mean dizziness or giddiness which is momentary or permanent disorientation. For the moment one is not able to tell certainly his position in space, it is not associated with nausea except when there is visibility. If there are no objects of known position visible, one may feel perfectly normal and yet not be perpendicular to the earth as he thinks. The ability to know one's position in space is therefore, not inherent in the canals, but is only computed when we have some body of known position to refer to. A pilot may feel confident that he is flying on even keel and come out of a fog banked violently or doing a vertical turn.

Vertigo is usually associated with nausea because when a point of known position as the earth begins apparently to turn up on edge and make violent gyrations our system of comparting our position is suddenly impaired and we fall or stagger because we do not exert the proper use of our muscle sense with which we ordinarily maintain our position. So much for normal functioning.

Abnormal functioning is due to excitation or depression of the vestibular apparatus chiefly by four sources: (1.) intoxication; (2.) circulation disturbances; (3.) reflex stimulation, and (4.) trauma.

Intoxications are divided into the mild types and severe types.

Mild intoxications or actual inflammation may result from absorption from a sluggish bowel and I believe this is actual absorption rather than reflex. It is called biliousness, general malaise is also closely associated. Mild impairments also result from alcohol and tobacco. The first tobacco sickness with its dizziness, palor, sweat and nausea, is due to abnormal functioning of the vestibular apparatus from mild poisoning. When the alcoholic falls to the ground, it is not because his

muscles are so weak they will not hold him up, but because he has an alcoholic intoxication of either the end organs, pathway or cortical representation of the vestibular apparatus and cannot compute his position. He feels that he is standing erect and the ground is moving up to him, instead of him moving toward the ground.

Focal infection from the usual sources may cause mild but increasing symptoms. Acute toxemias from influenza may cause a labyrinthitis with violent symptoms which, however, usually clear up in a few days, as the amount of absorption decreases. At first the inflammation may be so localized as to not affect the hearing, but after awhile it spreads to the rest of the end organ and the hearing becomes impaired, if it does not clear up soon.

In mild increasing types such as from focal infection, there is always proportionate impairment of both cochlea and vestibule. When there is much disproportion between vertigo, nystagmus and hearing the lesion is along one of the pathways to the brain after the eighth nerve has entered the pons.

More violent intoxications such as produced by syphilis, mumps, epidemic meningitis and tuberculosis may cause a neuritis of the 8th nerve that will completely destroy both functions.

In traumatic cases since the fibres of both divisions are so closely associated in the main nerve trunk, it is impossible to injure the trunk by trauma in such a way that both functions will not be proportionately impaired. Also since the nerve completely and tightly fills the fallopian canal, it is impossible to fracture the bone across this nerve and not break the nerve. Therefore, when the mastoid is fractured, we either get no loss or complete loss, as far as the nerve is concerned. We may get conduction loss due to blood or rupture of the middle ear or drum, however, these usually clear up with time and luck on keeping out infection.

In losses as from toxemias or unusual stimulation as from the reverberation of wild wells, if one suspects malingering and when other malingering tests fail, an accurate measurement of the defect of hearing can be estimated by running a quantitative test on such an ear. The quantity as well as the quality of the objective signs of nystagmus, past pointing and falling can be measured and compared with the normal.

Dysfunction due to circulation causes such as fainting, embolism, thrombosis, oedema, ischemia, and hemorrhage may produce vertigo. The treatment of course is to find the high blood pressure, anemia, nephritis or general disease causing the symptoms. Meniere's syndrome is a common example. The symptoms are all violent because of their sudden onset. When the patient has had time to get his cerebration dulled to this unusual condition he ceases to be dizzy, or like the aviator, gets used to it and must depend on his other ear thereafter, however, that will be taken up I presume by the internist.

Therefore, vertigo, be it toxic, traumatic, circulatory, or reflex, is due to abnormal functioning of the vestibular apparatus.

VERTIGO FROM THE VIEWPOINT OF THE INTERNIST*

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Vertigo is a complaint that not infrequently confronts the internist. The etiology, however, is at times difficult to ascertain, even though this symptom is rarely present by itself. Although vertigo may not be a chief complaint, it may still be quite troublesome to the patient.

Patients with vertigo frequently consult the internist first, and so it becomes his duty to attempt to determine the cause which oftentimes requires the help of the ophthalmologist, otologist, and neurologist. However, the internist usually should be able to determine to which specialist the patient should be referred.

As has been pointed out by the previous speakers vertigo is merely a symptom and results from a disturbance in the mechanism of equilibrium. A broad concept of this mechanism must be kept in mind in order to more clearly understand the condition; the finer details, however, belonging more essentially to the special fields concerned. Thus, grossly, equilibrium is maintained by a coordinating center which is located in the cerebellum. But impulses arising from the viscera, muscles, skin, joints, eyes, and semicircular canals reach this coordinating center. The cerebellum is also connected with the motor centers of the cerebrum. Thus there are connec-

*Given before Section Eye, Ear, Nose and Throat, Forty-first Annual Session, Oklahoma State Medical Association, Oklahoma City May 17, 1933.

tions between the entire nervous system and the equilibrium center so that a disturbance of equilibrium may be the result of a lesion in the cerebellum or in any one of these afferent tracts.

I shall try as far as possible to remain within my own field in this discussion and not encroach upon the more specialized branches.

Vertigo may be divided into a true and a pseudo-type, but as time does not permit such a differential etiological classification, and as this, even so, is only of relative importance I shall not attempt to divide these two types in classification. Furthermore, I shall not consider what might be termed an apprehensive vertigo, such as is felt when looking from a high place or that which is sometimes seen in neurotic individuals.

From the standpoint of the internist I feel that etiologically most cases of vertigo can be classified generally under two large headings: first, vascular; and second, toxic. There are, however some conditions which cannot be so divided, such as vertigo arising from cerebral origin and cases due to allergy.

Under vascular types one may include conditions with alterations in blood pressure, such as hypertension, arterio-sclerosis, aortic regurgitation, nephritis and Addison's disease; for in these diseases vertigo may often be a symptom. Cerebral arterio-sclerosis or atheroma of the cerebral vessels, however, is the cause of vertigo in the large majority of cases in adults past the sixth decade of life, and often is the chief complaint in these cases. With the complaint of vertigo in the presence of brachial and radial artery hardening and ophthalmoscopic evidence of sclerosis of the retinal arteries the diagnosis is almost certain. Graves' disease or exophthalmic goitre might be included under alterations in blood pressure and yet that unknown toxic substance present in exophthalmic goitre and not in toxic adenomatous goitre may be the cause rather than the blood pressure change. Cases of severe anemia whether the cause be hemorrhage or idiopathic often complain of vertigo. Lacquer or quick drying paints and varnishes in which amyl nitrite is used may cause vertigo, which, however, is usually only transitory, although long standing cases have been reported in lacquer workers. Syphilis, likewise, may be a cause, especially when it affects the

middle ear. Vertigo is sometimes seen in disturbed heart action such as was common after shell-shock in the war. Premature ventricular contractions and extrasystoles if frequent enough, often give rise to the complaint of transient dizziness.

Now to briefly consider conditions that may be classified as toxic causes. Under this heading one may include focal infection as is present in dental and tonsillar sepsis, and prostatic infection. Alcohol, tobacco, and many drugs, such as the salicylates, aspirin, quinine, arsenic, iodides, potassium, bromides, lead, acetanilid, opiates, barbiturates, and pyramidon occasionally cause vertigo. I personally developed a severe vertigo on one occasion which lasted almost two hours after taking 10 grains of pyramidon. Also under toxic causes one may consider fumes such as are emitted from coal gas and gasoline motor exhausts. So-called "ptomaine poisoning," or more correctly bacterial intoxication, may cause vertigo. And finally gout, a condition not frequently seen now-a-days, may be accompanied by vertigo.

In addition to these two large inclusive groups there are conditions that may be termed cerebral in origin and which do not clearly come under either of the above classifications. Migraine and the aura of epilepsy may be considered here. What occurs in these conditions, of course, is not understood, but a dizzy sensation at times is complained of with the attacks.

Allergy is a phenomenon which must be classed by itself. I do not believe it to be as frequent an etiological factor as the allergists might lead us to believe, yet its occurrence is definite, as I have seen a few cases, some rather severe, relieved by the removal of the offending foods. Thus, the causes of vertigo are numerous.

The treatment of the types of vertigo I have considered is essentially the same and depends upon the treatment of the underlying cause. In the case of toxic vertigo relief may be expected if one can find the source of the toxin and eliminate it. This, however, unfortunately is at times most difficult. The vascular causes of vertigo, likewise, are not always easily amenable to treatment. Cerebral arterio-sclerosis, the cause of probably a majority of cases defies treatment itself, although at times the vertigo is relieved by such drugs as luminal and the nitrates in addition to a careful regime of living. The vertigo accompanying the anemias and exophthalmic

goitre is relieved as the etiological factor is cared for. And likewise, with vertigo due to other causes; in other words, remove or treat the cause.

I have been especially careful in this discussion to avoid mention of aural and ocular types of vertigo, and also such conditions as intracranial tumor and abscess, realizing, however, their relative frequency, as these types have or will be considered by specialists in these fields.

In summary, then, vertigo from the internist's viewpoint is merely a symptom, the cause of which may be classified generally as being either toxic or vascular and the treatment is that of the underlying condition.

TYPES OF NEPHRITIS AND THEIR MANAGEMENT.

Henry A. Christian, Boston (Journal A. M. A., Jan. 20, 1934), states that there are numerous clinical classifications of nephritis and that each author seems to have suggested a different classification. All classifications take into consideration a concept of time or duration and so there are acute, subacute and chronic types of nephritis. From the point of view of pathologic change, as well as from that of symptomatology, nephritis may be divided into two great groups, one in which the lesion predominately concerns the glomeruli and the other in which the vascular system of the kidney shows the essential changes. Clinically, urinary observations, edema, increase in blood pressure and nonprotein nitrogen retention with eventual uremia are the significant departures from normal whose absence or presence in varying degrees determines the type of nephritis and its place in any of the classifications. As stated, the dominant lesion in one group of nephritis patients lies in the glomerulus; in the other in the vascular system. The glomerulus is a vascular unit, though one modified in that in the glomerulus the capillary has in addition to the usual structure a further layer made up of greatly flattened epithelial cells derived from the tubule. In final analysis, it is the presence of this layer derived from the epithelium of the tubules and changes in it that have much to do in determining a subdivision of nephritis into two distinctive groups. In either of these two types of renal lesion, as time goes on, epithelial elements of the tubule atrophy and interstitial tissue proliferates. Clinically, there is support for the idea of duality of lesion. There seems definitely a form of nephritis that follows infections and another type in which infection plays no demonstrable part but in which vascular degenerative lesions are causative of disturbance of renal function. In the first type both acute and chronic stages are observed, while in the second type no clinical evidence develops until the vascular lesion has become chronic. Since infection has an etiologic relationship to acute nephritis, infection should be treated as adequately as possible and due consideration should be given to the eradication of renal foci of infection. The indiscriminate removal of teeth and tonsils in such patients is to be deprecated. In acute nephritis there is practically no indication for drug medication. Edema rarely is marked in degree and only then should

diuretics be used. A patient with acute nephritis should remain in bed at complete rest so long as there are indications of gradual clearing of the activity of renal process; blood in the urinary sediment is the best index of this. If, after prolonged rest, no change in activity of process occurs, physical activity should be permitted in increasing amount, provided it does not cause an increase in the blood cells in the urine. Chronic nephritis of all sorts is first of all a chronic disease. This means a long period of management and necessitates a continued entirely adequate diet, adequate both as to food constituents and as to caloric requirements for the activity allowed the patient. Only with a rising value of blood nitrogen is there any reason for marked restriction. In patients with chronic nephritis the factors that influence the therapeutic and dietary management are edema, nitrogen retention with the possibility of uremia, anemia and circulatory failure associated with hypertension. Edema in nephritic patients is of renal and cardiac or circulatory type. Removal of the edema should be attempted by diuretics and by a fluid restriction in the diet. Mechanical removal of the fluid may be required. As nitrogen retention develops, lowering of food protein is indicated. If uremia develops and the patient is not very anemic, bleeding is indicated, possibly followed by transfusion. The circulatory failure of chronic nephritis is to be recognized and treated as any other form of cardiocirculatory insufficiency. There is nothing to do about the hypertension of chronic nephritis beyond recognizing it as an added load on the heart and so restrict other cardiac loads in proportion to the hypertension and particularly after the heart becomes hypertrophied enough to be easily demonstrated as enlarged by simple physical examination.

CLINICAL SIGNIFICANCE OF ROENTGENOMETRY IN OBSTETRICS.

Herbert Thoms, New Haven, Conn. (Journal A. M. A., Feb. 24, 1934), mentions the importance of roentgen methods, as applied to clinical obstetrics, in the diagnosis of fetal position, the presence of fetal abnormalities, the presence of multiple pregnancy and perhaps more especially in the diagnosis of a rachitic deformity of the sacrum. Recent knowledge of the wide incidence of the android and the anthropoid type of pelvis in otherwise "normal" individuals makes a knowledge of these conditions imperative for the practice of scientific obstetrics. The author believes that sensitized paper should be used instead of a celluloid film. This technic, together with the ability of making pelvigrams of several patients at one appointment, has reduced the cost of the procedure to a real working basis for ward patients. That roentgen pelvimetry has not been more generally employed is probably due to the fact that:

1. The majority of women will be delivered spontaneously whether or not pelvic measurements are made.
2. The medical profession does not readily adopt suggested changes in an established routine.
3. The adoption of new diagnostic methods often increases the patient's expense.
4. The present methods of estimating the degree of disproportion, although entirely speculative, are apparently satisfactory in many cases.
5. In the majority of instances, roentgen pelvimetry cannot be performed by the obstetrician himself, but requires the assistance of a roentgenologist.
6. The great value of roentgenometric diagnosis is generally unappreciated.

SYMPOSIUM ON DISEASES OF CHILDHOOD

- "CARCINOMA OF THE UPPER COLON IN CHILDHOOD" - - - Roscoe Walker, M.D., John F. Daly, M.D.
- "PRESENTATION OF A CASE OF HEMORRHAGIC DISEASE OF THE NEWBORN WITH UNUSUAL SYMPTOMATOLOGY" - C. J. Alexander, M.D.
- "SOME COMMON CAUSES OF PYREXIA IN CHILDREN" - Arthur Jenkins, M.D.
- "ANEMIA OF INFANCY AND EARLY CHILDHOOD" - - - C. V. Rice, M.D.

CARCINOMA OF THE UPPER COLON IN CHILDHOOD*

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PAWHUSKA

Carcinoma rarely enters into the differential diagnosis of obscure complaints during the period of childhood and perhaps rightly so. To be sure, the incidence of cancer in persons below the age of fifteen years is so low that reported cases are regarded as oddities. Chajutin³ states that in 1929 the Committee for Cancer Research had under observation 12,179 cases of cancer but there was no case recorded in a child. In 1914 Redko¹⁷ was able to find but 536 cases of carcinoma during the period of youth in a review of the literature up to that date. 831 cases of cancer reviewed by Janucz⁸ revealed only four instances below the age of twenty years. Similarly, Matzen⁹ in reporting 8054 cancer cases from Bavaria detected but seventeen cases during the first two decades of life. Schamoni¹⁹ performed 2500 necropsies on children in the first ten years of life and found but one case of carcinoma. In Odessa, Medwedew²² saw 1181 cases of cancer in twenty-five years of observation but recorded none below the age of ten years.

If we were to judge of the frequency with which cancer occurs in childhood from the figures just quoted we would surely be misled. Proof that neoplastic disease in general and carcinoma in particular does occur with more frequency than is generally recognized is borne out by many writers. Cushing⁴ in an analysis of 1108 intracranial tumors found that

twenty percent of these occurred below the age of twenty years. Sittenfield²⁰ states that in children, renal tumors are the most frequent up to the age of five years. He also reminds us that carcinoma of the liver is not unheard of in childhood and of the thirty-two cases reported during childhood, twenty were in the first five years of life. Phifer¹⁵ in 1923 found records of forty-nine cases of carcinoma of the rectum and sigmoid in patients below the age of twenty. Twenty-four of these were in the period from birth to fifteen years. Uhlhorn²¹, writing in 1925, 69 cases of carcinoma of the rectum alone in children below the age of fifteen. From these facts we are reminded pointedly that symptoms which would suggest carcinoma in an adult must by no means be disregarded simply because the patient is not of the "cancer age."

The literature provides no complete or detailed survey of the incidence of carcinoma of the large bowel in children except a statement by Phillips¹⁶ that twenty-eight percent of 93 cancers in children affected the intestinal tract. There are many statements relative to its incidence in persons of all ages. Ewing⁷ writes that 8.56% of 22,340 German cases of cancer affected the intestine. Of 52,420 cancer cases in this country recorded by the census report of 1914, 11.8% were found to arise in the intestine or peritoneum. It is said that 5.25% of all cancer is rectal. These figures are sufficient to clearly indicate the high percentage of carcinoma of the intestine.

To refine the problem still further it is necessary to assess the frequency with which cancer occurs in the large intestine above the sigmoid flexure. Ewing⁷ gives

*Read before Section on General Medicine, Annual Meeting Oklahoma State Medical Association, Oklahoma City, May 17, 1933.

the distribution in a series of 297 cases as follows:

TABLE I.

LOCATION	NO. OF CASES	PERCENT-AGE
Caecum	47	15
Ascending colon	22	7
Hepatic flexure	19	6
Transverse colon	44	14
Splenic flexure	31	10
Descending colon	10	3
Sigmoid flexure	124	41

This seems to show quite clearly the increasing frequency of carcinoma of the intestine in the sigmoid as compared with the upper colon. Babcock¹ states that 55% of cancer of the large intestine are in the pelvic colon and sigmoid.

In reviewing the literature cases of carcinoma have been chosen only when occurring, (a) in the colon above the sigmoid portion; and (b) in children below the age of fifteen years. There follows a tabular presentation of such cases as fall within the prescribed limits.

TABLE II.

AUTHOR	DATE	SEX	AGE	LOCATION
Maydl ¹⁰	1883	F	12	Caecum
Maydl ¹⁰	1883	M	13	Caecum
Burger ²	1893	M	15	Ascending colon
Mayo-Robeson ¹⁵	1895	F	14	Ascending colon
Nothnagel ¹⁴	1898	M	12	Caecum
Ruczynski ¹⁸	1904	M	13	Splenic flexure
Muralt ¹³	1913	M	13	Ascending colon
Wainwright ²²	1925	F	11	Splenic flexure
Chajutin ³	1929	F	14	Caecum
Walker-Daly	1933	M	5	Caecum

The case herewith reported was seen by us and operated by one of us (RW). This then becomes the tenth one reported in children below the age of fifteen and above the sigmoid flexure. The age of the present case (five years) is notably lower than that of other reported cases. The majority of the cases in the literature fall within a relatively narrow age range (eleven to fifteen). Cases even younger than the one reported have been placed on record but they all involved either the sigmoid or the rectum. Thus Clair⁴ reported a case of carcinoma of the sigmoid in a boy of only 3½ years. Duncan⁶ similarly reports a case of carcinoma of the terminal ileum in a boy of 3½ years. It will be seen from Table II that 60% of the cases were found in males. Chajutin³ observes this fact and adds that females in this age group are more likely to develop carcinoma of the generative tract while boys show this pre-

dilection for an intestinal localization. The case report which follows gives the essential data on the case observed by us.

The patient was a boy of mixed parentage (Indian-Greek-U. S.), who was five years of age. He was first seen on May, 30, 1932. At that time he complained of cramp-like pain in the lower abdomen of two months duration. This pain lasted only a few minutes and recurred at intervals varying from an hour to a day. Examination at that time was negative in every respect except for slight tenderness in the right lower quadrant of the abdomen. On June 6, 1932, the boy was seen again at which time the pain was recurring at more frequent intervals. He had been nauseated and had vomited on two occasions. He had had an attack of diarrhea lasting but one day. There had been no melena. The blood and urine were normal, as were the pulse and temperature. The stools were examined for parasites but none were found. At this examination it was thought that a mass could be palpated to the right of the umbilicus. Exploratory operation was advised at this time. On July 1, 1932, the abdomen was opened by a right rectus incision and a hard, irregular tumor was found at the ileo-cecal junction. It was about the size of an English walnut. The mass folded into the cecum, forming a valve-like obstruction. This was assumed to be the cause of the intermittent pain of which the patient complained. Another tumor about eight inches in circumference was found in the mesentery of the ascending colon. This was deemed to be inoperable and left untouched. The terminal ileum and the cecum were resected to relieve the obstruction and an end-to-side anastomosis done. Following operation the growth increased in size rapidly. Loss of weight and anemia became marked. By August tenth, definite evidences of pulmonary metastases (right lower lobe) were demonstrable. At the same time the liver was found to be notably enlarged and to extend below the umbilicus where its border could be felt to intersect that of another mass, the latter presumably the primary lesion. The boy failed rapidly in strength but at no time was there any evidence of obstruction. He died of cachexia on August 29, 1932, about five months after the onset of his symptoms. The sections of the tumor

removed at operation revealed a well marked adenocarcinoma.

SUMMARY

1. A brief review of the incidence of cancer in children is given.

2. The incidence of intestinal localization of cancer is reviewed.

3. A summary of cases of carcinoma of the colon above the sigmoid in children under the age of fifteen years is tabulated as found in the literature.

4. A case of carcinoma of the caecum in a boy of five years is reported.

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PRESENTATION OF A CASE OF HEMORRHAGIC DISEASE OF THE NEWBORN WITH UNUSUAL SYMPTOMATOLOGY

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CLINTON

This case is presented, not with the purpose of reviewing the symptomatology of idiopathic hemorrhage of the newborn, but to present a symptomatology and physical findings which would be misleading or obscure and would not immediately suggest the diagnosis.

The case presented is a child of German parentage living in a rural community. The family history is essentially negative. Mother, age 26, has given birth to 4

children, the oldest being 5 years of age. All of the children, except the case here presented are living and well. Mother had had no miscarriages. There is no history of bleeding or hemorrhagic tendency in the father, mother or any of the children.

In this case the duration of labor was one hour, spontaneous, there being only a neighbor woman in attendance. None of the three previous labors lasted over one hour.

Immediately after birth, the baby was apparently normal in every respect. There was no cyanosis, difficulty in respiration, or unusual signs. The baby continued to do well, with no difficulty in nursing, normal stools, crying practically none, and was apparently a normal baby until the onset of this illness to be discussed.

At exactly the age of three weeks, he suddenly quit nursing and cried a lot. The only thing noticed by the mother was a blackness of the upper gums. The baby failed to nurse well throughout the night and continued to be very restless. It was brought to my office on the following morning, and appeared not to be very sick.

Examination of the baby revealed the following findings: temperature 99°. Heart and lungs essentially negative. Abdomen was quite distended, but no masses, or splenic or unusual liver enlargement noted, and no evidence of any acute abdominal condition. There was an indurated area over the right maxillary bone just below the zygomatic process. This indurated area did not involve the skin, or subcutaneous tissue but was apparently deep, fixed and lying adjacent to the bone. At this time, about 16 to 18 hours after the onset of symptoms, the upper gum gave the appearance of having been previously incised with a linear incision, and followed by an exudate. A small amount of watery purulent material could be expressed from the gum. Microscopic examination did not reveal Vincent's or any specific infection, but a mixed type as would find in any ordinary smear of the mouth.

The baby was examined the following day. Subsequent to the examination of the previous day, or rather commencing on the second day, tarry stools were constant until the termination of the case, although this part of the history was not obtained until after the baby died. The temperature had risen about a degree higher than the day before. At this time, in addition to the swelling over the maxillary bone, there

was a swelling about the right eye with some edema of the conjunctiva, with protrusion of the eyeball. The case was then seen by Dr. Frank Vieregg and retro-bulbar abscess was considered, although it seemed unlikely due to the rapidity with which this swelling of the eye had occurred.

At this time a puncture wound was made through the swollen tissue between the maxilla and the fold of the cheek, with considerable bloody drainage.

On the third day, examination showed that the swelling below the zygomatic process had decreased in size very markedly and likewise the tissue surrounding the previous puncture in the mouth had lost some of the edema and swelling. The swelling around the orbit and the protrusion of the eyeball was reduced about one-half, and for this reason and because of its rapid onset the idea of retro-bulbar abscess was abandoned. The temperature had risen to 103 at this time, (third day). A questionable neck rigidity also was observed.

On the fourth day the temperature rose to 105. The mass over the maxillary bone and the swelling and protrusion of the eyeball had disappeared entirely, and there was slight discoloration over the area of swelling around the eye, and a few petechial spots over the skin of the entire body. At this time there was definite neck rigidity. Spinal puncture was done, and dark blood fluid obtained. The fluid was only under slightly increased pressure (practically normal). Microscopic examination of the fluid revealed no organisms, no pus cells, but R.B.C. irregular in shape and poorly stained. Later on the fourth day, the infant had a convulsion which the mother said lasted fifteen minutes and died one hour later.

SUMMARY

An infant with a negative past history suddenly develops a black swollen condition of the gums, which breaks down. Coincident with this was a swelling over the maxillary bone below the zygomatic process, in the area of the periosteum. Also at this time developed a swelling around the right orbit, edema and swelling of the conjunctiva with protrusion of the eyeball, and the finding of bloody spinal fluid.

One of the important findings or signs, that of tarry stools was not obtained until

after the patient died, and is one of the reasons why the diagnosis was not suspected when the child first came under observation. There was undoubtedly a hemorrhage beneath the periosteum of the maxillary bone which dissected its way to the margin of the upper gum. The question of whether there was a primary cerebral hemorrhage, or whether the blood dissected its way to the orbit and thence to the spinal fluid is debatable. However, I am of the opinion there was a primary cerebral hemorrhage as well as hemorrhage beneath the periosteum. And I believe that a diagnosis of meningitis is untenable.

This case presents a varied and unusual symptomatology and findings, and in its early stages would not lead one to a diagnosis of hemorrhagic disease of the newborn. It was not suspected when first seen.

SOME COMMON CAUSES OF PYREXIA IN CHILDREN*

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Pyrexia or fever is the natural reaction of the organism to bacterial invasion and is often a criterion of the individual's resistance or the severity of the infection and in its peculiarities frequently gives us a valuable clue as to the diagnosis. Fever is also present in diseases other than those caused by bacteria or their products but it is these latter conditions with which we are most concerned here. Fever in the presence of infection is usually a favorable sign as it tells us the organism is marshaling its forces to combat the invading foe but at times fever may become so high as to be in itself dangerous to life. To most of the laity fever in any degree seems to be the symptom which is most alarming and is one of the most potent factors in bringing the patient into the physician's hands. This is especially true in children and for this reason we as physicians must be ever on the alert and be able to give a logical and as correct a diagnosis of the cause of fever as possible. A child may vomit and have cramping pains in the abdomen or a diarrhea which

*Read before the Twenty-fourth Semi-annual Meeting of the Southeastern Oklahoma Medical Association, Durant, Oklahoma, December 14, 1933.

the mother will undertake to treat with home remedies until there is noticeable fever and then the doctor is called in to treat a ruptured appendix or a markedly dehydrated and toxic patient with a severe infectious gastroenteritis.

Infants and children being immature organisms, as a rule, show a more severe and erratic reaction of fever. This can readily be understood when it is realized that the heat regulation center has not reached that stage of development where it can properly meet and coordinate all the intrinsic and extrinsic factors which determine body temperature. This thermolability is frequently demonstrated in the newborn where we see a perfectly normal infant with one or two degrees of fever and no demonstrable disease, but find the babe bundled up in blanket upon blanket, not even his nose showing, the room tightly closed and a hot water bottle at his feet. He has not the power to radiate and disperse the heat generated in his tissues as has the adult, consequently it is retained and induces a rise in body temperature above the normal.

Another common cause of fever in the newborn, not related to infection, is inanition or dehydration. This usually occurs from about the second to the fifth day of life and is due to lack of fluid primarily and food secondarily. This condition was formerly thought to be due to lack of food alone as it occurred during the time of no breast milk and rapid loss of weight. That this is not true has been recently shown by Kugelmass. To one series of newborn infants Kugelmass supplied an adequate amount of breast milk from birth; to another similar series he gave what he terms his "hydrating solution." This consisted of an aqueous solution of gelatin 6%, dextrose 3%, and sodium chloride 0.5%, and was administered in amounts of two ounces every two hours throughout the twenty-four cycle and the infant allowed to take what he desired. It was never forced. In the first series the initial loss of weight and the incidence of dehydration fever were little affected. In the second series not only was the initial weight loss reduced to a minimum, but the temperatures of the infants were better stabilized than in the first series and none developed dehydration fever. Therefore the giving of food alone is not enough to prevent dehydration fever, but is controlled by adequate administration of fluid from birth and the action is greatly en-

hanced by the addition to the fluid of hydrating substances such as gelatin and salt. Thus, hydrating the body tissues prevents the diminution of plasma water and concentration of serum protein and the consequent rise in temperature.

Of the causes of fever due to infection in infants and children, the most prevalent, and I find the most unsatisfactory to treat, is the common cold. Children are very susceptible to upper respiratory infection and it is a rare thing that a child escapes two or three colds a year. The usual naso-pharyngitis lasts three to five days and is accompanied by fever ranging up to 101 to 102 degrees. In older children it causes little concern and in infants about the only symptoms are restlessness, anorexia and difficulty in breathing through the nose. These symptoms are as a rule easily allayed by a mild ephedrine solution in the nose and small doses of aspirin and luminal with forced fluid intake. It is the complications of the common cold that are often overlooked that make this condition very important and most worthy of our deepest consideration. The eustachian tube in the child is shorter, straighter and relatively of larger caliber than in the adult and thus makes the middle ear more liable to infection. If we examine the drum membranes of all children with colds, we will find that the greater proportion of them will show some degree of infection. Frequently this condition progresses from the catarrhal stage to an acute suppurative otitis media. Here we have higher fever, 103 to 104, more toxicity and usually pain in the affected ear, although we may see the drum rupture spontaneously and discharge pus without the child having had any pain and unless we have examined the ear and warned the parents it may cause us some little embarrassment when this occurs. The drum membrane will not always rupture spontaneously even though we have a marked infection of the middle ear and this makes it doubly important that we examine the ear repeatedly with the otoscope during the course of a cold, especially in the face of a higher fever than is usual, because an undrained otitis media brings the added hazard of an acute mastoiditis. More often than not an otitis media will clear up under simple medication as warm glycerine instilled into the external canal every three hours and expectant treatment. However, when the condition shows signs of progressing as

obliteration of landmarks and beginning bulging of the drum, surgical drainage should not be delayed. It is better to open the drum a little early, before pus formation, than to wait too long, as incision of the drum membrane properly carried out never does any harm.

Sinus infection is not as frequently a complication of a cold in children as otitis media, but does occur frequently enough to warrant our consideration. At birth only the two maxillary sinuses and the ethmoid area are present and these are very rudimentary. The ethmoid area begins the development into cells about the fourth year. The frontal sinuses do not appear until the fifth to seventh year. Infection of the maxillary sinuses may occur at any time during the course of nasopharyngitis and may be the cause of a stubborn muco-purulent nasal discharge but usually it does not cause much trouble due to the short duct and relatively large opening into the nose. Infection of the ethmoid area is rather common in infants and children and likewise may be responsible for a long continued catarrhal condition. These conditions should always be thought of when we see a resistant nasal discharge, especially when unilateral. Promotion of drainage by instillation into the nose of mild ephedrine or adrenalin solution along with a mild antiseptic as neosilvol is usually sufficient to clear these conditions up in time, but if the condition persists, then they should be placed in the care of the otorhinologist.

Another fairly common complication of nasopharyngitis is retropharyngeal abscess. The greatest number of cases occur between four months and one year of age. This condition arises in the lymph nodes which lie on either side of the median line of the posterior pharyngeal wall. Infection lodges in one of the nodes giving rise to swelling, tenderness and finally suppuration. If the node is high up, the swelling can be seen on inspection of the throat, but more often it is lower down and can only be made out by the use of the pharyngoscope or by feeling with the finger; the latter being always the simplest and best way of making the diagnosis. The symptoms are high and usually irregular fever, difficulty in swallowing, difficulty in breathing which may be marked, and a holding of the head back and to the side. Suppuration usually takes place in five or six days. Unless the condition is recognized and proper treatment

instituted the outlook is very grave. Death may occur from progressive weakness or asphyxia or very suddenly from laryngeal spasm. The abscess seldom opens spontaneously but if it does, death may occur from suffocation or a pneumonia resulting from aspiration of the pus into the lungs. If unopened, the abscess may burrow down into the mediastinum and various other places and may even erode the carotid artery. The only treatment is drainage as soon as suppuration occurs and supportive measures. This should be done by one who has had experience in handling these cases, if possible. When drained as they should be, the mortality is about five per cent, but when they are unrecognized and untreated, the termination is nearly always death.

A disease which in this particular locality stands in the front ranks of those conditions common in childhood, and in which fever is a prominent sign, is malaria. It has been my observation in the past few months that malaria is one of the most common offenders in causing fever in children in this section. Also, it manifests itself differently in infants and children than in adults. That is, it is unusual that we see chills and high fever except in older children and even in them it is not very common. In infants the usual findings are low grade fever, 99 to 101, drowsiness, anorexia and a rather cyanotic appearance around the mouth and eyes. In children the fever may go higher at times with complaint of pain in various regions, headache, loss of weight and apparent anemia. Since chills and high fever are rare in this disease in infants and children, a positive diagnosis can only be made by finding the organism in a blood smear. Once the diagnosis is made, the condition is usually very amenable to treatment with adequate doses of quinine.

Another febrile disease very common in infants and children is pyelitis. Pyelitis is a bad term as the condition is probably never confined to the pelvis of the kidney but involves the entire urinary tract. A better term would be pyelonephritis. This disease may occur at any time and can be primary or secondary, the latter probably being the most common. The infection may occur in three ways: (1) Ascending, through the urethra bladder and ureters into the pelvis of the kidney; (2) by extension through adjacent tissues along the lymphatics; and (3) by the blood stream. It is most commonly seen after some acute

infection as upper respiratory disease or gastro-enteritis. In the former, the mode of origin is most always hemotogenous and in the latter, ascending. Many organisms may be at fault, but the colon bacillus group is most often the offender. Infants are more commonly affected than older children and girls much more commonly than boys. There is nothing, as a rule in the symptomatology of the disease that calls attention to the urinary tract. There are only the symptoms of any acute febrile condition such as fever, anorexia, restlessness and gastro-intestinal disturbances as vomiting and diarrhea. Occasionally the attack may be ushered in by chills or convulsions. After the disease has been present for a week or ten days, there is often a peculiar transparent like pallor which is very suggestive of pyelitis. The diagnosis is made definitely by examination of the urine microscopically for pus. Six or more cells per high powered field is usually considered diagnostic of pyelitis. Of course the genitalia should be cleansed before the passage of the specimen examined. When no pus is present in the first specimen, it does not rule out pyelitis and specimens should be examined on four or five successive days if the disease is suspected, as occasionally there will be a blocking of the flow of pus temporarily by a clump of cells or a plug of mucus. The course of the disease is two weeks to two months and the urine should be examined at least every other day during this time. Some cases are very stubborn and do not yield to any treatment and run a chronic course. In these cases it is wise to make a very thorough investigation of the entire urinary tract as there may be present some abnormality such as kinked or dilated ureter, cystic kidney, etc. Exacerbations and relapses are rather common and babies and children who have once had the disease are likely to have subsequent attacks when they are upset from any cause. The treatment of this disease is varied according to each physician and this bespeaks the fact that no treatment is very effective. A certain number will recover in two or three weeks no matter what the treatment and others will continue for a long period of time though the pharmacopia is emptied into them. The method of treatment I follow is, I believe, the one most commonly used. This is large amounts of water and other fluids at all times. As for medication, I first use alkalies in the form of sodium and potas-

sium citrate, each seven and one-half grains every three hours or more often if the urine does not become readily alkaline. This is continued for about four or five days and then I discontinue the alkalies and use hexamethylenamina in doses regulated according to the age of the patient. For this drug to be effective, the urine must be highly acid and to accomplish this I use ammonium chloride in adequate doses. This is continued three or four days and the alkalies again used. This alternate use of the alkalies and hexamethylenamina is continued throughout the course of the disease. Aspirin and luminal are used for pain, fever, and restlessness. If the course of the disease is long it may be well to change to some other drug for a while as pyridium, which has recently received a large play but it has been my own experience that the first mentioned routine has given more satisfactory results than any other agent.

SUMMARY

Some of the more common causes of fever in infants and children due to infectious and non-infectious processes have been discussed briefly. They are all diseases with which we are apt to be confronted at any time. And since the diagnosis of all of them is at times more or less obscure, it is well that we be on our guard, as we find only that for which we look.

ANEMIA OF INFANCY AND EARLY CHILDHOOD*

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MUSKOGEE

The etiology of anemia of infancy and early childhood is as follows: (1) Those who are nursed at the breast for a long period of time without any additional food, particularly cereals and vegetables in the form of vegetable soup, after the fifth month. (2) Infants on an exclusive diet of cow's milk over a long period of time. (3) Infants on Eagle Brand which is 50% evaporated milk and 50% cane sugar. If a child received two or three teaspoonsful of Eagle Brand at a feeding, he would not receive a great deal of mineral matter. Eagle Brand not only

*Read before the Oklahoma State Medical Association Section on Obstetrics and Pediatrics, May 15, 16 and 17, 1933, Oklahoma City, Oklahoma.

predisposes to anemia, but also rickets. (4) Children or infants who are on goat's milk should be watched very closely for anemia, as goat's milk seems to be one of the exciting causes. (5) Infectious diseases, bad hygiene, lack of sunshine and fresh air, insufficient exercise, unhealthy environment, intestinal parasites and chemical poison are other causes of anemia.

The blood of infancy and early childhood differs from that of adults. The hemoglobin is highest in the new-born, and gradually subsides for the first six months where it remains at about 70% until two years of age, and it usually ranges from 70% to 85% at ten years. The red corpuscles are extremely high at birth (may be as high as 6,500,000) and in infancy they generally vary between four and five million, and gradually diminish during childhood, reaching the adult standard at about six years of age. The nucleated red cells are present in the blood during the first week of life, but after this, when present, may be considered abnormal. The white cells at birth are 15,000 or over, and during the first week they drop to about 12,000, and remain at this number until two years of age, then drop to 10,000 in the third year. There is a steady decline until the number reaches 8,000 at the tenth year. The blood picture of a child who is infected with some intestinal parasite, resembles very closely that of pernicious anemia. A low red count, less than 2,000,000, and hemoglobin of 40% or lower, with a color index of one plus is the usual picture. As pernicious anemia seldom occurs in childhood, intestinal parasites must be absolutely eliminated before pernicious anemia can be considered the exciting cause.

After intestinal parasites have been eliminated, and there is still a question of pernicious anemia, one is justified in resorting to the therapeutic test, that is, giving liver therapy and watching the improvement of the blood picture. If there is an improvement, one may discontinue the liver therapy and see if there is a relapse, always remembering that pernicious anemia is a rarity in early childhood.

In infancy the chemical poison which most frequently causes secondary anemia is lead. Cases have been reported where infants have been poisoned by lead shields used on mothers' nipples, also from painted toys.

In this country, the only disease due to blood parasites which we may consider causing anemia is malaria. Since malaria is not so common in early life the condition may be overlooked, unless a careful examination of a smear is made, and anemia is rarely severe in these cases, unless the disease has been going on for some months untreated. The youngest infant that I ever treated for malaria was four weeks old. The probable diagnosis in this case was made after excluding all conditions that might cause fever in an infant of this age by obtaining a history and seeing the child stretch and yawn; and then by confirming my probable diagnosis with a smear. Infectious diseases may not produce any marked degree of anemia, except those of long duration. Typhoid fever and bronchial pneumonia are two of the most usual causes of this condition. Congenital syphilis, tuberculosis, osteomyelitis, chronic empyema, chronic non-tubercular pneumonia, nephrosis or any localized focus of pyogenic infection.

In the treatment of anemia, the cause of the condition should be considered. In case of anemia due to loss of blood from any cause, or excessive bleeding in hemophilia, transfusion should be the treatment of choice, either citrated or non-citrated blood being useful. Transfusion may also be used with very gratifying and beneficial results in many of our infectious diseases, already enumerated as a cause of anemia. Children with hemophilia may be carried through major operations by repeated blood transfusions given before and after the operation. All minor operations, and paracentesis of the ear drum, or extraction of a tooth should be preceded by a blood transfusion, and the operation should not be performed until the coagulation time reaches normal. Children with anemia with conditions which are curable by surgical means, should not be operated upon until repeated transfusions have caused the blood to approach normal limits. Children at the point of death from traumatic hemorrhage may survive only as a result of transfusions, while appropriate procedures are performed. Any secondary anemia in which the hemoglobin is as low as 30% should have the benefit of small repeated transfusions, of 30 to 70 c.c. depending upon the age of the child and repeated every three to five days. These small transfusions are more beneficial than a large

amount at one time. This is particularly true with anemias associated with nutritional conditions in infants.

Diet is a very important consideration in the treatment of anemia. Whipple claims the best results are obtained by a mixed diet, green vegetables, liver and the red meats. Bottle babies may have the liver and powdered vegetables added to their milk. Rest is essential and in severe cases rest in bed is imperative, while in older children mental as well as physical rest is required. Occupational therapy may be used in aiding the mental condition, such as basket weaving, bead stringing, drawing, and painting. The task is in fitting the child's hands to the need of his physical condition. Sun rays or ultra-violet light is also very beneficial. Certain definite blood changes take place with either direct sunlight or the lamp and there is an increase in the red cells, leucocytes, and the hemoglobin.

Cheney and Neimand, of Stanford, treated fifty cases of secondary anemia with liver extract and iron with the following results: They found an improvement in the group of anemias due to bleeding and the improvement was more pronounced than in any other mode of therapy. Sixteen in another group improved while taking liver extract and iron, but they claimed these would have improved to the same degree on any other treatment. From these conclusions of this series of fifty cases it seems justifiable to use liver extract and iron in secondary anemia, for anemia due to hemorrhage, and for those of obscured etiology with macrocytosis of the red blood cells. They also stated that at present there is insufficient data available to show whether it should take preference over large doses of iron. Sturgis of Ann Arbor, emphasizes the importance of large doses being administered. He says that it is not the nature of the preparation, but the size of the dose of iron in the treatment of chronic anemias that meets with the best results. Poor results are to be obtained if inadequate dosage is given. A convenient method of giving iron to an infant is to use saccharated iron oxide, N. F., which can be given either by making it in powders and adding it to the bottle, or it may be dispensed in solution and given one teaspoonful, three times a day. Contrary to the usual belief, large doses of iron are very well tolerated by children and rarely cause digestive disturbance.

Redman and Gertrude, in order to obtain a solid basis for the judgment of various anemias, tested several remedies in groups of infants and children. They found in convalescent nursing infants and small children with mild anemias that arsenic instead of increasing the hemoglobin and red cells caused a loss of both, while severe anemias responded favorably. It appeared, furthermore, that in mild anemias the effect of the remedies on the hemoglobin and that of the red cells differed greatly. For regeneration of the hemoglobin copper and ferronovin ranked first. In severe anemias arsenic ranks highest for regeneration of the hemoglobin, and copper moves to the last place. They also say that for the rapidly growing organism of infants and small children, which has fewer reserves at its disposition than the slowly growing organism, the combined administration of several anti-anemias seems to be more favorable than the administration of a single one.

In the September issue of the *Journal of Pediatrics*, Grulee and Sanford of Chicago, report twenty cases of anemia treated by the injection of 5 c.c. of colloidal iron as ferric hydroxide intraperitoneally. The injections were given twice a week for eight injections, and their conclusions were that the injection, intraperitoneally, of iron in doses of five milligrams at three day intervals, combined with one or two transfusions of blood, seems to be of value in the treatment of children with secondary anemia. They also claim that it has no effect on the red cells and hemoglobin in primary anemia.

Physical findings of a child with anemia are about as follows: Pallor and a general muscular weakness; edema is not uncommon, generally appearing at first at the ankles and about the eyes; some enlargement of the spleen; the liver is also enlarged if the anemia has extended over several months. Rickets may also be found with all of the ricketic signs and symptoms, also a hemic murmur may be heard. When this condition is found in an infant, there is some question if there may not be a congenital heart. There may be anorexia, nausea and vomiting, and gastro-intestinal disturbance with protruding abdomen. The laboratory findings are as follows: the red blood count usually varies from one to four million according to the severity of the anemia. The hemoglobin may be as low as twelve to fifteen percent, par-

ticularly in cases where iron deficiency has played a part in causing the anemia. The leucocytes may range from three thousand to twenty thousand. A study of the stained smears reveals variations in the size, shape and staining of the red blood cells, the degree of variation depending, more or less, on the severity of the anemia.

Prognosis: The prognosis of these cases of secondary anemia is usually favorable, provided the treatment is not too long delayed.

Case History: September 7, 1932. Thelma C., 23 months of age. Mrs. C. is the mother of four children, oldest four years, second two and one-half years, and this child of twenty-three months is one of twins; birth weight four pounds each. This child was put on Eagle Brand until it was six months old, and later on diluted cow's milk. It was put on whole cow's milk at eight months, at which time cream of wheat and oatmeal was also given. At eleven or twelve months strained vegetables were added. At this time she does not take very much food, but takes her milk well, one quart a day. She has one or two stools a day. Began crawling and pulling up to chairs at about one year of age. Due to her exposure to whooping cough, she was given the serum, but developed the disease regardless. Since having the whooping cough she has not been well, though not ill, but has not grown or gained in weight in six months. Has had no other disease of any kind. At birth, the mother states, this baby was the weaker of the two, at times having blue spells.

Physical Examination: General appearance is one of anemia; tissues are flabby and dehydrated; somewhat edematous about the face; lips pale; abdomen large and protruding; she does not walk and seems quite sick; spleen two fingers below the costal margin; liver not palpable; fontanel one finger open; chest quite well formed; heart murmur may be heard all over front of chest; she moves about on the examining table with a great deal of difficulty; weight seventeen pounds and five ounces. Her weight at 23 months should be twenty-five and one-half pounds.

Laboratory Findings: Hemoglobin, 28; leucocytes, 10,200; red blood count, 2,800,000; total neutrophils, 64; lymphocytes, 20; staff, 1; segmented, 60; macrocytes, many; microcytes, many; poikilocytes, many; polychromatophilia, few.

Probable Diagnosis: At this time a probable diagnosis of atypical lymphatic leukemia was made with a grave prognosis.

Treatment: One pint of milk, one rounding tablespoonful of Mead's cereal, boil ten minutes, stirring; strain and add milk to make one quart and boil two minutes, add four tablespoonsful of Vitavose, and one rounding teaspoonful of Spintrate. Feed eight ounces every four hours. Every other feeding, one level tablespoonful of liver extract is added. This was given until 100 grams were used and then discontinued. In addition to the above formula she was given soft boiled eggs, crisp bacon, baked sweet potato, all vegetables, and stewed liver ground and added to her vegetable soup. Medicinally she was given one dessertspoonful of cod liver oil with Maltine three times a day, and one teaspoonful of Squibb's Cuprim-Ferris three times a day. One week later she was brought to the office and weighed eighteen pounds and six ounces (a gain of one pound and one ounce in one week); hemoglobin, 43 (a gain of twenty per cent in one week); red blood count, 3,280,000; leucocytes, 10,100. Two weeks from her first visit her weight was nineteen pounds and three ounces (a gain of one pound and fourteen ounces in two weeks); hemoglobin, 63 (a gain of thirty-five per cent in two weeks); red blood count, 3,680,000 (a gain of 880,000 in two weeks); leucocytes, 13,200. Her general condition in two weeks was much improved. The puffiness of her face had disappeared; general appearance better; color greatly improved; appetite and disposition much improved; the hemic murmur is still present; the baby is walking.

The diagnosis was changed from a probable case of atypical lymphatic leukemia to secondary anemia of a nutritional type with still a question of a congenital heart, due to the fact that there was a history of cyanotic attacks for the first few days of life, but at this time the murmur has entirely disappeared and the hemoglobin is eighty per cent, making a positive diagnosis of secondary anemia.

In Conclusion: Secondary anemia is a preventative condition, except when due to loss of blood. A mixed diet of vegetables and other blood building foods is the most important and iron used in large doses should be considered, but liver with iron, at this time, is not fully settled as to its

benefits. Several small transfusions are very beneficial in the nutritional type of secondary anemia.

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BORDEN'S EVAPORATED MILK

The many advantages in infant feeding of a high quality evaporated milk, such as Borden's, have been described in numerous reports of extensive clinical investigations. During the period from 1929 to 1932, inclusive, no less than 43 papers on the properties and uses of evaporated milk appeared in the scientific literature, while in 1933 there were 21 additional papers on this subject in medical and technical magazines.

The most recent report on the successful clinical use of evaporated milk is that of Quillian in the Journal of the Florida Medical Association for January, 1934. As a result of his experience with 173 infants on evaporated milk compared with 167 on other formulas, this writer states that, "The chief advantages of the use of evaporated milk are ease of preparation, ready digestibility, economy, and safety," and he also concludes that, "_____ properly modified, evaporated milk may be considered a satisfactory food for infants."

Borden's Evaporated Milk, which was accepted by the Committee on Foods of the American Medical Association in 1930, has been found satisfactory by innumerable physicians, who make it an invariable practice to specify Borden's by name when prescribing a standard evaporated milk for infant feeding.

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ROUTINE USE OF NEOSKIODAN IN SUSPECTED INJURIES TO GENITO-URINARY TRACT.

Charles Morgan McKenna, Chicago (Journal A. M. A., Feb. 24, 1934), states that excretory urography is of value in early diagnosis of trauma of the urogenital tract. It is also of value in early surgical intervention when indicated. The question of shock and time is an important factor. A ruptured kidney is not always an indication for nephrectomy. In many cases the clots may be removed and the kidney sutured with good results. The management of a ureteral tear is accomplished by doing a retrograde catheterization and screwing this catheter into one introduced from below. Excretory urography in rupture of the bladder will show whether one is dealing with an intraperitoneal or an extraperitoneal tear. In rupture of the urethra it is important to use two interlocking sounds, one introduced from the bladder through a suprapubic cystotomy and the other through the meatus, thus establishing coaptation of the severed ends of the urethra and drainage. There is no place in surgery in which judgment and common sense is such an asset as it is in traumatic surgery.

PRACTICAL CONSIDERATIONS OF MAXILLARY SINUSITIS

JAMES C. BRASWELL, M.D.
 D. L. EDWARDS, M.D.
 TULSA

INTRODUCTION

As the title suggests, this paper is not intended as a strictly scientific nor theoretical consideration of the subject of maxillary sinus disease, but rather an informal discussion of several points, especially as to diagnosis and treatment from the purely practical viewpoint. It is suggested by the familiar verdict, "experience is the best teacher," and is similar to a recent paper by Carter¹, whose expressions were forceful and timely. Our clinical experience leads us to believe that the importance of such a consideration of the subject will bear further discussion.

PSYCHOLOGY AND PATHOLOGY

The paranasal sinuses are lined with ciliary epithelium and the healthy sinus is one in which these cilia are able to perform their function, namely, that of keeping the flow of secretions directed toward the ostium and hence into the nasal cavity. When this condition exists, free drainage and aeration is maintained and the sinuses resist infection and do not become clogged.

Irritation is followed by paralysis of the cilia and stasis results. The most frequent cause of this condition is the common cold. When this stasis is prolonged the cilia are destroyed, permanent pathological changes occur and the condition passes into the chronic stage. Once destroyed, ciliated epithelium is not regenerated for it is a highly differentiated tissue and is not replaced in its original form by the underlying tissue.

It follows then that the diseased sinus is left in an unnatural state and has lost a portion at least of its inherent resistance to infection. Methods of treatment should be directed toward early conservation of the normal lining for this reason.

ETIOLOGY

The common head cold is responsible for the great majority of initial sinus infections. Many men believe that no child reaches one year of age without having had some sinus involvement following colds. A bad cold that lasts over ten days to two weeks is probably always a case of

sinusitis and should be treated as such. It occurs as a sequelae of influenza and its associated rhinitis. In children the exanthemata are prolific fore-runners of sinus infection. Other causes are apical abscesses of the bicuspid and maxillary molars that protrude into the sinus, or by the operative accident of pushing a fractured root into the sinus during extraction.

DIAGNOSIS

The diagnosis of an acute sinus infection is not difficult; considerable difficulty may be experienced in determining for a certainty the chronic sinus. Pain, definitely recurring headache, and presence of muco-purulent material in the affected nares is usually found in the acute cases. Redness and external swelling may or may not be present, but occasionally a severe cellulitis of the adjacent orbit is seen. Pus exuding from the antral opening in the middle meatus on direct inspection along with transillumination in the darkroom are the main standbys of diagnosis.

Roentgenograms are of value, but are subject to so many sources of human error that their value in the average hands is quite relative. Flat films are subject to errors in position, over-shadowing of parts, under or over exposure and finally to interpretation. Phillips² feels that the average roentgenogram of sinuses is not giving a correct diagnosis and stresses the importance of precision of technic. He urges at least six exposures for a complete study, each sinus or group of cells are viewed from three projections.

Diagnosis by displacement technic using radio-opaque oils has found many enthusiastic supporters. We do not use this method for it is felt that the information so gained does not warrant the time and expense needed to perform it. Radio-opaque substances merely give a profile outline of a plane of the sinus cavity corresponding to its widest and longest diameters from a certain anatomic point of view. Material gained on washing out the antrum gives one an idea of its contents and may have to be resorted to in making the diagnosis.

ASSOCIATED PATHOLOGY

The maxillary sinus has been held accused as a frequent focus of infection. This is not borne out by our clinical experience, it seems, and is probably due to the fact that aeration and drainage is

usually sufficient to prevent the infectious material from remaining under pressure and so toxic absorption into the system does not occur as rapidly as in other tissues harboring infection. Indeed, the chronic sinus in most cases has undergone a fibrotic thickening of its walls which would further militate against absorption.

Childrey⁵ and Essex⁵ injected histamine, epinephrine, nicotine, and other highly absorbable drugs with definite systemic effects, into the sinuses of experimental animals and found that they were slowly absorbed even in the presence of inflammatory changes following both infection and the introduction of foreign substances. From their work they conclude that bacterial toxins elaborated in infected sinuses are absorbed with equal difficulty.

Benedict³ in a recent study of 225 cases of retro-bulbar neuritis found only one case in which sinus disease could be considered as the etiological factor. Many ophthalmologists still advocate operation on the paranasal sinuses in retrobulbar neuritis, but Benedict feels that the results obtained are not from ablation of the sinus as a foci, but rather as a result of the consequent rise in temperature due to absorption of blood. The results obtained are parallel with the accepted foreign protein treatment of retro-bulbar neuritis by typhoid vaccine.

Chronic bronchitis and asthma may be caused by sinus disease, but since asthma is so closely related to allergy and other dysfunctions these should be eliminated by proper tests before the sinus can be held accountable.

TREATMENT

Since free drainage and aeration are the main requisites of the healthy sinus, these conditions should be restored as soon as possible. This can be done most effectively in the great majority of cases by suction applied to the nose and hence through the natural opening, after the method of Proetz. Most cases of acute sinusitis will clear up without deep-seated pathological changes in the sinus itself under this form of treatment. A cotton pack saturated in a twenty per cent solution of neosilvol is applied in the middle meatus and allowed to remain for fifteen to twenty minutes, as a means of shrinking down the membranes and promoting drainage. Suction by means of a Gray's water suction pump on the ordinary faucet is then applied by

the aid of a special glass tip. The ordinary case requires but a few seconds of this suction and we usually continue suction until the contents are considerably mixed with air, an indication that the sinus is for all practical purposes empty. It is sometimes necessary to drain the maxillary sinus by making an opening other than its normal one. This is usually done through the thin bony plate opposite the inferior meatus, and can easily be done with a special trocharecannula under local anesthesia. Irrigation can then be accomplished through this opening with counter-drainage through the normal opening.

Irrigation is carried out by some through the natural opening. Myerson⁴ is an enthusiastic advocate of entering the natural ostium and reports that he was successful in eighty-one per cent of one hundred seventy consecutive cases. This would indicate that he has attained an extremely high degree of skill in this particular procedure, but since such skill is lacking to most of us, an intentional bony opening beneath the inferior turbinate is without doubt a better procedure than a traumatized natural ostium resulting in scar tissue and distortion.

Many radical operations on the maxillary sinus are done and often without thought or knowledge of the final end-result so far as the patient is concerned. The Caldwell-Luc, Denker, Canfield-Sturman and other procedures have reached a high degree of perfection from the mechanical point of view, but are often a complete failure from the patient's standpoint, who must contend with a pus-secreting, scabbing area in his nose for the remainder of his life. We have all seen the patient who five or ten years before has submitted to one of these radical procedures at the advice of some man who promises complete and permanent relief. Their symptoms have continued or returned and in many instances have been augmented by the havoc wrought and destruction of normal tissue. No doubt on the records of the operating surgeon this case has already been classed as "excellent results," or "cured" but we know the true outcome.

Hesitancy to perform these radical operations on the para-nasal sinuses does not come from timidity nor a lack of confidence in the mechanical efficiency of the procedures, but rather through a solicitude for the future comfort of the patient,

gained from years of observation of end-results.

There are, of course, occasions when the radical operation must be performed; when the sinus contains new growths, polypi, or if the walls become necrotic from prolonged suppuration, nothing short of a radical operation will do that patient any good.

In summarizing, the following points may be mentioned:

1. Free drainage and aeration along with preservation of function of the lining membrane and cilia are the main requisites for a healthy sinus.

2. Clinical experience does not bear out that the sinuses are so frequently a source of focus of infection as was formerly believed.

3. Drainage can usually be established by suction through the normal opening; irrigation is best practiced by a cannula opening in the inferior meatus with counter-drainage through the normal opening.

4. Radical operations with their consequent destruction of tissue leave the patient not only unhelped but harmed.

5. Radical procedures are indicated when the sinus is filled with adventitious tissue.

108 West Sixth Street.

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NUTRITIONAL NIGHT BLINDNESS: REPORT OF CASE.

Dwight L. Wilbur and George B. Eusterman, Rochester, Minn. (*Journal A. M. A.*, Feb. 3, 1934), report a case of highly probable nutritional night blindness because of the rarity of such cases occurring in the United States. The relationship of this symptom to deficiency of vitamin A and the retinal pigment visual purple are considered. It is worthy of emphasis that states of nutritional deficiency may arise, as in this case, not as a result of inadequate intake of vitamins or other foodstuffs, but as a result of gastro-intestinal or other disturbances interfering with either the normal digestion and assimilation of foodstuffs or their metabolic activity.

THE JOURNAL

OF THE

Oklahoma State Medical Association

Issued Monthly at McAlester, Oklahoma, under
direction of the Council

VOL. XXVI APRIL, 1934. No. 4

DR. L. S. WILLOUR Editor-in-Chief
McAlester, Oklahoma.

DR. P. P. NESBITT Associate Editor
Medical Arts Building, Tulsa, Okla.

Entered at the Post Office at Muskogee, Oklahoma,
as second-class mail matter July 28, 1912.

This is the official Journal of the Oklahoma State Medical Association. All communications should be addressed to The Journal of the Oklahoma State Medical Association, 203 Ainsworth Building, McAlester, Oklahoma. \$4.00 per year; 40c per copy.

The editorial department is not responsible for the opinions expressed in the original articles of contributors.

Reprints of original articles will be supplied at actual cost provided requests for them is attached to manuscripts or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, 203 Ainsworth Building, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

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EDITORIAL

RESOLUTIONS—ANNUAL MEETING

It will be greatly appreciated if any members having resolutions which they wish to present to the House of Delegates will see that they are in the hands of the Secretary not later than May 1, in order that they may be referred to the Resolutions Committee and their report prepared for the first meeting of the House of Delegates, May 21, 7:30 P. M.

This will greatly expedite matters and make it possible for the House of Delegates to complete their work Tuesday morning in time to participate in the general program at 10:00 o'clock.

Editorial Notes—Personal and General

DR. CHARLES R. HUME, of Anadarko, who has been ill, is reported improved.

DR. F. E. WALKER, of Lone Wolf, has returned to his home after undergoing an operation in Mangum.

DR. G. E. STANBRO, of Oklahoma City, has been added to the surgical staff of the Oklahoma City Clinic.

DR. A. K. COX, Watonga, has been appointed county health officer to succeed Dr. T. A. Hill, also of Watonga.

DR. H. R. SHANNON, of Enid, has been appointed county physician to replace Dr. D. D. Roberts, resigned.

DR. L. P. SMITH, formerly of Elmore City, has moved to Marlow where he will continue his practice of medicine.

DR. and MRS. J. C. HOWE have returned from Chicago, where Dr. Howe took a course at the Cook County Hospital.

DR. W. D. OLIVER, former Erick physician, announces his removal to Mangum, where he will continue his practice.

DR. J. C. REYNOLDS, of Frederick, attended the meeting of the Northwest District Medical Society in Wichita Falls, in March.

DR. CYRUS STURGIS, Ann Arbor, Michigan, delivered a lecture on "The Anemias" at the March meeting of the Ottawa County Medical Society.

DR. FRANK MCGREGOR, of Mangum, has returned from Temple, Texas, where he was called by the illness of his sister. She is reported improved.

THE MIAMI BAPTIST HOSPITAL entertained the members of the Ottawa County Medical Society with a chicken dinner at the society's February meeting.

DR. NED R. SMITH, of Tulsa, addressed the Washington County Bar Association, at Bartlesville, March 10th, on the subject of "Insanity and Crime From a Psychiatric Viewpoint."

DR. D. Y. McCARY, of Holdenville, who sustained severe burns about the face and neck when he fell across a stove after being overcome by gas fumes, is reported improved.

DR. and MRS. W. H. LIVERMORE, of Chickasha, left the last of March for New York, from which point they will sail for a month's cruise on the Carribean Sea, visiting points of interest in the West Indies, Central and South America.

DR. and MRS. FRED H. CLARK, who have been residing in Aspinwall, Pa., for the last fifteen years,

will return to El Reno about May 1, to make their home. Dr. Clark has been connected with the Veterans Hospital at Aspinwall.

WOODS-ALFALFA COUNTY MEDICAL SOCIETIES met March 17th at the Hotel Bell, Alva, Drs. Morrison, Palmer and Swope of Wichita, gave talks, as did J. D. Kahler, laboratory technician, also of Wichita. Dr. D. B. Ensor, Hopeton, was elected delegate to the State Convention, and Dr. A. E. Hale, Alva, alternate.

DR. L. J. MOORMAN, Dean of the University School of Medicine, spoke on "Trends in Medical Education" at a meeting of the University Chapter of the American Association of University Professors, in March, at the Faculty Club, Norman. Dr. L. A. Turley, also of the Medical School Faculty, spoke on "Tendencies in Pre-medical Education." The program followed an informal dinner.

THE SOUTHERN OKLAHOMA MEDICAL ASSOCIATION met in Ada March 6th, and had as their honor guests Drs. Robert B. Giles Dallas; Newton D. Smith, Rochester, Minn.; J. B. Eskridge, and Dick Lowry, Oklahoma City. The program was further filled by members of the Association and proved to be a very profitable and entertaining meeting. Their next meeting will be held in Chickasha, June 15th.

THE AMERICAN ASSOCIATION FOR THE STUDY OF GOITER will hold its annual meeting at Cleveland, Ohio, June 7, 8, 9, 1934, which is the week preceding the meeting of the American Medical Association. This meeting is held under the presidency of Dr. R. M. Howard of Oklahoma City. It is impracticable to publish the program in detail, however, the goiter subject will be discussed in all its phases by the leading authorities of the United States, and you can be assured of a most interesting and instructive program.

THE ANNUAL MEETING of the American Association on Mental Deficiency will be held at the Hotel Waldorf Astoria, New York, May 26, 27, 28 and 29, 1934. The Saturday session, May 26th, will be given over to the sociological, psychological and the special educational aspects of the problem in order that local social workers and school teachers may have an opportunity to attend without interfering with their regular duties. The Tuesday afternoon session will be a conjoint meeting with the American Psychiatric Association. Data as to the program may be obtained from the Secretary, Dr. Groves B. Smith, Godfrey, Illinois.

INTERSECTIONAL MEETING

The Intersectional meeting of the Oklahoma Pharmaceutical Association will be held in Oklahoma City, April 17, 18 and 19, at the Biltmore Hotel. Tuesday evening, April 17, at 7:00 o'clock, Mr. Anton Hogstad, Jr., of Merck & Company, St. Louis, will deliver an address, "The Story of Cinchona and the Conquest of Malaria," to which the doctors, dentists and their wives, the nurses and the druggists' wives are invited. This will be a most interesting meeting, not only because of Mr. Hogstad's address, but because of the general fellowship between the pharmacist and the doctor. The meeting will be followed by the annual President's ball.

News of the County Medical Societies

CANADIAN COUNTY MEDICAL SOCIETY met March 17th at El Reno. A six o'clock dinner was served, followed by a lecture on "Vertigo," by Dr. T. G. Wails, of Oklahoma City.

CLEVELAND COUNTY MEDICAL SOCIETY held their regular meeting March 8th at the Central State Hospital, Norman. Dr. Hugh Jeter spoke on "Anemia," and Dr. Grider Penick discussed "Pelvic Tumors." Both reside in Oklahoma City.

COMANCHE COUNTY MEDICAL SOCIETY met in regular session March 8, at Lawton. The program was in charge of Dr. F. W. Hammond, who presented Dr. Harry Wilkins, Oklahoma City. Dr. Wilkins gave a very interesting discussion on "Neuro-Surgical Conditions in Children". Dr. D. H. O'Donoghue, also of Oklahoma City, discussed "Injuries About the Knee Joint."

Dr. John R. Burton, former resident of Lawton, was a guest.

SOUTHWESTERN OKLAHOMA MEDICAL ASSOCIATION met in Clinton on March 20th, and the following program was presented:

"Tumors of the Chest," by Dr. C. W. Stevenson, Wichita Falls.

"The Relation of Ophthalmology and Otolaryngology to General Medicine," by Dr. C. R. Hartsook, Wichita Falls.

"The Care of the Breast in Obstetrics," by Dr. W. Wells, Oklahoma City.

"Deformities in Children Due to Fractures," by Dr. W. K. West, Oklahoma City.

Auxiliary Notes

WOMEN'S AUXILIARY to the Tulsa County Medical Society was entertained at a luncheon March 6th in the home of Mrs. J. W. Childs. Plans for the entertainment of the doctors' wives attending the State medical meeting were discussed.

CLEVELAND COUNTY'S AUXILIARY officers are as follows: Mrs. Charles R. Rayburn, President; Mrs. Ben Cooley, Vice-President; Mrs. O. E. Howell, Secretary; Mrs. H. B. Kniseley, Treasurer; Mrs. C. S. Bobo, Public Health Chairman; Mrs. J. L. Day, Mrs. Ben Cooley and Dr. Eleonora Schmidt, Advisory Committee. The members of this auxiliary take turns serving at the Cleveland County Free Clinic, sponsored by the civic clubs.

CANADIAN COUNTY AUXILIARY officers are as follows: President, Mrs. Malcom E. Phelps; Vice-President, Mrs. T. M. Aderhold; Corresponding Secretary, Mrs. W. B. Catto; Recording Secretary, Mrs. H. C. Brown; Treasurer, Mrs. A. L. Johnson; Press and Publicity Chairman, Mrs. E. W. Blatter, all of El Reno.

Resolutions.

WHEREAS, in the death of Dr. P. G. Dunlap, the city of Lawton, the surrounding community, the medical profession, and the Comanche Medical Society has sustained a deep loss:

BE IT THEREFORE RESOLVED, that the Comanche County Medical Society extend to his bereaved relatives and friends its deepest sympathy;

BE IT FURTHER RESOLVED, that these resolutions be sent to his immediate relatives, to the Journal of the Oklahoma Medical Association, and be spread upon the records of our society.

G. S. BARBER,
L. T. GOOCH,
W. J. MASON,
Committee.

DOCTOR HOWARD BANKES AMES

Dr. H. B. Ames, pioneer physician of Alva, died March 14, after a short illness. Dr. Ames was born in Dallas, Illinois, November, 1873. He graduated from Keokuk Medical College, Iowa, in 1901, coming to Alva in 1918, where he resided until his death.

Dr. Ames was a member of the Woods County Medical Society, the State Association, and the American Medical Association.

He is survived by his widow and three children, a sister and one brother.

Resolutions,

WHEREAS: Our beloved friend and fellow member, Dr. Howard B. Ames, of Alva, Oklahoma, has been taken from us by death; and

WHEREAS: He has been practicing in this vicinity for the past thirty-three years and has always been active in the work of organized medicine; and

WHEREAS: He will always be remembered as a man of high professional ideals with strict adherence to ethical principles and square dealing with his fellow practitioners, and a large share of sympathy for the poor and unfortunate; therefore

BE IT RESOLVED by the Woods-Alfalfa County Medical Society, at its regular session in Alva, Tuesday, March 27, 1934, that we express our regrets in the loss of our co-worker, and our heartfelt sympathy to the bereaved family, in this their great loss, in which we keenly feel our share.

A. E. HALE,
O. E. TEMPLIN,
Committee.

DR. C. A. McCLELLAND, a former member of Ottawa County Medical Society and for several years a practitioner at Miami, died at his home in Keyes, Oklahoma, where he had been located the past year. His death occurred January 26. Interment was at the G. A. R. Cemetery, Miami, the Ottawa County Medical Society attending in a body.

DR. M. P. WILLIS, practicing physician at Commerce for the past twenty years, died February 1 following a long illness. Burial was in the G. A. R. Cemetery, Miami, with members of the Ottawa County Medical Society acting as active and honorary pall bearers.

DR. W. H. BLACK, former member of the Ottawa County Medical Society, died at his home in Kansas City, Mo., February 28, after two weeks' illness. He was interred in Mt. Washington Cemetery.

CHRONIC NONTUBERCULOSIS BRONCHOPNEUMONIA.

David Riesman, Philadelphia (Journal A. M. A., March 3, 1934), reports five cases of chronic nontuberculous bronchopneumonia and discusses its etiology stating that while in many instances the sinus involvement is clearly indicated by the symptoms, especially in persons with a history of frequent colds, there are many cases in which the involvement would escape detection if roentgenograms were not taken; hence the importance of making in every case of these chronic lung infections, or in recurring colds in children, roentgenologic study of the paranasal sinuses. Rest in bed is demanded in the febrile and usually in the subacute cases, and in cases, febrile or not, presenting acute exacerbations. Locally, counterirritation may prove useful—mustard or a weak iodine application. For the cough, a simple remedy with creosote may be used; when the cough has been severe. A mixture of 2 Gm. of terpin and 0.12 Gm. of codeine sulphate divided into twelve capsules and given every three hours has been helpful. Local treatment by a competent specialist is indicated in sinus infection. Attention to the general health, with special efforts to prevent recurrent colds, is of prime importance. Regulation of exercise, work and play is required; cold bathing and massage are useful. The diet should contain an abundance of vitamins and cod liver oil in the cold season and viosterol at other times. Vaccines prepared from sinus secretion or sputum or stock vaccines often work beneficially. Climatic therapy is useful; Florida, California and parts of Arizona are good winter climates. For those who cannot afford to go away the sun lamp may prove useful. The rocky coast of Maine and of Massachusetts exercise a beneficial influence during summer. In addition to all other forms of medicinal or climatic treatment, psychotherapy occupies a prominent place. When the process has gone beyond the curable stage and bronchiectasis has developed, therapy is more difficult. The bronchoscopist, even the thoracic surgeon, may be needed.

CONDENSED PROGRAM, FORTY-SECOND ANNUAL SESSION, OKLAHOMA STATE MEDICAL ASSOCIATION,

TULSA, MAY 21, 22, 23, 1934

Meeting Place—All meetings will be held in the Mayo Hotel. Telephone, Tulsa, 3-2141.

Registration—Sixteenth floor, Mayo Hotel. All physicians, except those outside the state and visiting guests, must hold membership for the year 1934 before registering. Please attend to this, if you are not in good standing, by seeing your County Secretary at once.

Women's Auxiliary—The Women's Auxiliary of the Oklahoma State Medical Association extends a cordial invitation to the women visitors at the state meeting in Tulsa, May 21-23, 1934, to attend the meetings and entertainment provided for women during the meeting. Registration will be held on the Mezzanine floor, Mayo Hotel. Monday, May 21st, 10:00 A. M., the State Executive Board will hold its meeting on the Mezzanine floor. (Complete program in the May issue of the Journal).

Medical Reserve Corps Dinner—Mayo Hotel, 6:00 P. M., Tuesday, May 22nd. Guest of honor will be Dr. Charles F. Craig, Colonel, U. S. Army, Rtd., Tulane University, New Orleans.

Guests of Honor—Dr. Donald C. Balfour, Mayo Clinic, Rochester; Dr. Chas. F. Craig, Colonel, U. S. Army, Rtd., Tulane University, New Orleans.

Council—The Council will meet at 3:00 P. M., Monday, May 21st, in the Lounge room, sixteenth floor, for the transaction of business affairs, and thereafter on call of the President.

House of Delegates—Will meet at 7:30 P. M., Monday, May 21st, Junior Ball Room, Mezzanine floor, and at 8:00 A. M., Tuesday, May 22nd, same place.

General Scientific Sections—Will be held, beginning at 9:00 A. M., in the Crystal Ball Room, sixteenth floor:

TUESDAY, MAY 22.

9:00 to 10:00 A. M., moving pictures.

10:00 to 11:00 A. M., "Benign and Malignant Lesions of the Stomach and Their

Management," Dr. Donald C. Balfour, Rochester.

11:00 to 12:00 A. M., "Amebic Dysentery," Dr. Charles F. Craig, New Orleans.

WEDNESDAY, MAY 23.

9:00 to 10:00 A. M., moving pictures.

10:00 to 11:00 A. M., "Amebic Dysentery," Dr. Charles F. Craig, New Orleans.

11:00 to 12:00 A. M., "The Duodenum," Dr. Donald C. Balfour, Rochester.

SECTIONS.

All Sections will meet at 1:30 P. M., Tuesday, May 21st, and at the same hour on Wednesday, May 23rd. Meeting places will be as follows:

Surgery—Crystal Ball Room, sixteenth floor.

Medicine—Junior Ball Room, Mezzanine floor.

Obstetrics and Pediatrics—Lounge Room, sixteenth floor.

Eye, Ear, Nose and Throat—Main Private Dining Room, Mezzanine floor.

Urology and Dermatology—Room B (formerly called Men's Writing Room), Mezzanine floor.

GENERAL INFORMATION,

The mornings of May 22nd and 23rd will be given up entirely to General Meetings, these meetings to be addressed by the guest speakers, from 10:00 A. M. to noon. It is very important that all in attendance should be prompt, as it is very disconcerting to the speaker to have any disturbance after his address is begun.

Please note carefully the places of meeting of the Scientific Sections, as much disturbance can be avoided by going directly to the section which you have decided to attend.

Early registration of the members of the profession of Tulsa will be greatly ap-

preciated, thereby facilitating the registration of out of town members.

The commercial exhibits will be held on the same floor as the registration, giving everyone an excellent opportunity to study this very important feature of the meeting.

Discussion of Papers—Men proposing to discuss papers in the Scientific Sections should speak slowly and distinctly in order that the reporter may be able to accurately report the discussion. Each discussor should clearly state his name and address before beginning his remarks, and as far as practicable it would be appreciated if the discussor would put in writing his remarks and hand to the reporter.

GENERAL MEETING.

Tuesday, May 22nd

8:00 P. M.

Crystal Ball Room, sixteenth floor, Mayo Hotel, Dr. A. W. Pigford, General Chairman, presiding.

Invocation—Rev. C. C. Grimes, pastor of Boston Avenue Methodist Church, South.

Violin Solo—Mrs. G. Garabedian.

Introduction of Guests—Dr. A. W. Pigford.

Address of Welcome on behalf of the City of Tulsa—Dr. T. A. Penny, Mayor.

Address of Welcome on behalf of the Tulsa County Medical Society—Dr. Ned R. Smith, president.

Response—Dr. T. H. McCarley, McAlester, retiring president.

President's Address—Dr. LeRoy Long, Oklahoma City.

9:00 P. M.

President's reception and dance, Crystal Ball Room.

GOLF

MONDAY, MAY 21

Annual Tournament, Tulsa Country Club, starting at noon. All green fees paid. A dinner and entertainment will follow at the club house, \$1.50 per plate.

TUESDAY, MAY 22

All members of the State Medical Association may play at any of the follow-

ing courses, green fees paid by person playing:

Tulsa Country Club.

Oakhurst Country Club.

Indian Hills Country Club.

Committee: Drs. James Stevenson, S. Murray and E. L. Cohenour. Prizes donated by the following individuals and firms of Tulsa:

Dr. W. Albert Cook
H. H. (Scotty) Taylor
Morningside Hospital
Medical Arts Building
Medical Arts Prescription Shop
Mayo Hotel Pharmacy
American Optical Company
Oakhurst Country Club Golf Shop
Oklahoma Hospital Sanitarium
Tulsa Country Club Golf Shop
Indian Hills Country Club Golf Shop
Roy Getman Drug Store
McFarlin Country Club
Martin Fleming Company
Medical Arts Florists
Renbergs
Forsythe Surgical Supplies
Phillips Produce Company
Walk-Over Boot Shop
Public Service Company
Robert McBirney Company
Palace Clothiers
Bob Evans Pharmacy
Clark's Good Clothes
Jenkins Music Company
Flower Hospital
Haynes Auto Supply
Bliss Hotel Pharmacy
Bardon's Sporting Goods
Tribune Newsboy
Riggs Optical Company
Lincoln Drug Store
Central Drug Store
O'Hara's Barber Shop
Bishop's Waffle House

MEDICAL RESERVE OFFICERS

Make your plans to attend the Reserve Officers dinner, 6:00 P. M., May 22nd.

Col. Charles F. Craig, M.C., retired, will be the guest of honor. Col. Craig is greatly interested in the Reserve Corps, and one of the principal reasons he consented to come to our State medical meeting was that it would give him the opportunity to meet the Medical Reserve Officers of Oklahoma.

Let every Reserve Officer who attends the State medical meeting show his appreciation by his presence at the dinner.

Further details will be furnished you before the date of the meeting.

P. P. NESBITT, Chairman,
Committee on Medical Reserve Corps
Dinner.

OKLAHOMA PEDIATRIC SOCIETY.

This society announces that it will hold a meeting on Monday, May 21st, at the Mayo Hotel. There will be a clinical conference at one of the Tulsa hospitals from 9:30 to 12:00 A. M. Dr. C. E. Bradley will be in charge of this program. Dr. W. McKim Marriott, Dean of Washington University Medical School, St. Louis, will be the guest speaker.

A dinner for Dr. Marriott and Dr. George Ormiston, one of the staff of the Washington University Medical School, at the Mayo Hotel, at 6:30 P. M. Registration for this dinner will be made at the hotel.

 COMMITTEE REPORTS

These reports are made in compliance with provisions of the Constitution and By-Laws which call for publication of such matter in the issue of the Journal preceding the Annual Session.

 REPORT OF COMMITTEE ON TUBERCULOSIS STUDY AND CONTROL.

To the Oklahoma State Medical Association, in regular session at Tulsa, Oklahoma, May 21, 22, 23, 1934.

The members of your committee, after due consideration, request the privilege of submitting the following report:

First, we desire to urge the individual members of the medical profession to give tuberculosis the careful consideration it so obviously deserves. During the past three years of famine our two state sanatoria have been full, with long waiting lists. While this constitutes encouraging testimony of interest on the part of both patient and doctor, the large percentage of advanced and moderately advanced cases sadly reflect upon the community from which they come. With rare exceptions, it is safe to infer that someone is to blame, when pulmonary tuberculosis reaches advanced stages before adequate treatment is considered. We grant that it is not always the doctor's fault; however, in the final reckoning he must assume his share of the blame. Since responsibility must ultimately become a conscious part of every physician's burden, we implore the members of the profession to be generous with their diagnostic skill and judicious in their dealings with tuberculous patients.

We recommend that a very careful study be made with reference to the state's responsibility for the care of those suffering from tuberculosis, in order that the next administration may be adequately and properly informed with reference to this problem.

We also recommend that it should be borne in mind that we are passing through an unprecedented financial crisis, and that the present pressure by a

long waiting list at the doors of the two state institutions cannot be accepted as a definite indication with reference to future bed capacity. If this is not taken into consideration, there is danger of over-expansion and unnecessary taxation.

It is also recommended, that in behalf of the taxpayers, the state institutions should carefully discriminate between those who are entitled to care at the expense of the taxpayers, and those who are able to pay for good medical care, either at home or in a private institution. In this connection, we also recommend that the turnover in the state institutions should be carefully guarded, in order that the interest of both patients and taxpayers may be conserved. In many instances where adequate medical care is available, convalescent patients, making use of the education they received in the institution, might be advantageously returned to their homes. Under such a program, naturally the question of contact should always have careful consideration. To further facilitate rapid turnover, with safety to the patient and those in contact, we would suggest that each state sanitarium have one or more nurses especially trained in tuberculosis work, for follow-up and supplementary educational purposes. In this way the patient returning home would be safeguarded, and the education, which the sanitarium is so well prepared to supply, could be extended to other members of the family. This would also materially aid the family physician in the home management of the case.

It appears that such a follow-up service would be much less expensive to the taxpayers of the state than the building of more beds and a more protracted period of residence in the sanatorium. Such a program would also stimulate the family physician's interest in the tuberculosis problem, and, to some extent, increase his patronage, whereas, otherwise, the taxpayers would carry the burden of long-continued maintenance in the institution.

While it is necessary to take care of those actually suffering from tuberculosis, emphasis should be placed upon education. Such a program as that suggested above would not only provide the necessary care, but carry education into the home and encourage the medical profession to take more interest in the problem of tuberculosis control.

We also desire to call attention to the two federal institutions in the state for the care of Indians suffering from tuberculosis: Shawnee Indian Sanatorium, Shawnee, Oklahoma, and Choctaw-Chickasaw Sanatorium, Tahleah, Oklahoma.

Since the course of tuberculosis in American Indians is prone to take on a more acute phase than in the members of the white race, we feel that the problems of control become equally acute. Since the two races mingle freely in the State of Oklahoma, it is obvious that the tuberculous Indian constitutes a menace, not only with respect to his own people, but to all with whom he comes in contact. In dealing with tuberculosis in the Indian, the doctor's responsibility is multiplied by the tardy racial response to medical advice, especially when a long-continued and rather difficult regime is required.

Respectfully submitted for your consideration.

L. J. MOORMAN, M. D., Chairman;
F. P. BAKER, M. D.,
D. W. GILICK, M. D.

REPORT OF THE COMMITTEE ON INDUSTRIAL AND CONTRACT PRACTICE.

The past year has seen considerable change in the industrial practice of the state, due to the fact that the law passed by the last legislature creating a State Insurance Fund, went into operation on July 21, 1933.

As a result of this, and of the losses sustained, many of the private companies carrying industrial insurance have either withdrawn from the state or are greatly curtailing their risks, with the result that an ever-increasing number of risks are going over to the State Insurance Fund. The Oklahoma law is based upon that of California and New York, and the report of the New York Commission, for 1933, shows that approximately 75 per cent of the industrial insurance carried in that state is now under the state fund. It is estimated that this per cent, or even greater, in Oklahoma will, in the next year or two, be under the state fund. It is mandatory that all state employees, and employees of municipalities, be insured under this fund, provided they are acceptable to the commission.

The committee has visited the office of the manager of this fund to determine just what the status of the operation of the fund is at the present time. It finds that the operation of the fund is in its formation stages, and considerable amount of organization is still to be carried out, and many of its policies have yet to be formulated. There has been considerable complaint from many physicians over the state that the remuneration for their services has been unnecessarily delayed, and the charges often considerably reduced. The office of the manager assures us that any delays in the past have not been contemplated, but were unavoidable, and that in the near future the normal time for the payment of an account, after the receipt of the final bill and report, should be about seven days. All checks have to be signed by the chairman of the commission. They realize that they must conduct this insurance fund along the lines of the private companies, and intend to do so. At the present time they are following roughly the fee schedule of the Canadian Compensation Commission, but have not made out any fee schedule of their own. There is no medical advisor, but by the middle of April the governor is to have appointed five advisory members, representing industries of the state, to act as an advisory board to the manager and the commission.

The selection of the physician, in cases of injury, is, as always, a responsibility of the employer. The commission is requiring that all prospective employees shall be examined by a physician selected by the employer, and not the patient's family physician.

Insurance forms "A" and "B" are being sent out by the State Insurance Fund at the present time, requesting the following information:

Form "A".

STATE INSURANCE FUND

Capitol Building, Oklahoma City.

If Any Permanent Disability, State Percentage and Cause.

Name
Address
Occupation
Employer
Insurance Carrier

Date
Have you ever sustained serious injuries?
When
Have you ever had a claim for compensation?
If so, state name of employer, nature of injury and the date.
Have you ever had a liability claim for an injury?
If so, for what injury, and the date?.....
Eyes: Appearance
Vision: Right/20/..... Left/20/.....
Nose
Ears: Right Left
Mouth Teeth Tonsils
Chest Lungs Heart.....
Abdomen
Hernia
Genito-urinary
Skin Back
Extremities
Urinalysis (chemical) if over 40 years of age
Blood pressure if over 40 years of age
Deformities
Remarks
This man is approved for employment () Not approved ()
Signed M. D.
City or town

Employee.

Form "B".

LETTER OF INSTRUCTION FOR PRE-EMPLOYMENT EXAMINATION.

The State Insurance Fund does not deem it advisable to insure risks employing persons suffering from the following disabilities:

Eyes: Test by Snellen Table—50 per cent or over loss of vision or complete loss of either eye.
No.

Reading other than normal. Doctor should state cause.

Progressive eye disease. No.

Ears: More than 50 per cent loss of hearing. No.

Hernia: Where condition is such that it is subject to strangulation. No.

Enlarged or relaxed rings. No.

Genito-urinary: Any infection. No.

Back: Any noticeable disability. No.

Extremities: Any major dismemberment. No.

Blood Pressure: Maximum 165/100.

It is necessary that each employee sign his or her examination blank.

All employees in the same locality must be examined by the same physician. Physician to be chosen by the employer. This eliminates family physicians examining employees.

The State Insurance Fund will not be liable for examination fees.

Immediate notice of injury on State Industrial Commission form No. 2 and notice on form No. 5 when

injured employee returns to work or is released from doctor's care as able to return to work.

The committee wishes to make the following recommendations to the Oklahoma State Medical Association:

1. That the committee on industrial and contract practice be empowered to confer authoritatively with the manager of the State Industrial Fund with a view to the establishment of an equitable fee schedule.
2. That they recommend to the manager of the State Industrial Fund that he employ a doctor of medicine, experienced in industrial surgery, as medical advisor to the fund, so that one familiar with the usages of the commission and the adequacy and type of treatment of cases will be available. This man might be ex-officio a member of the state committee on industrial and contract practice.

W. P. FITE, Chairman;
C. E. CLYMER,
E. A. AISENSTADT.

REPORT OF THE COMMITTEE ON POST GRADUATE MEDICAL TEACHING FOR 1934

The major activity of this committee during the past year has been the completion of the post graduate course in internal medicine and pediatrics begun by the University of Oklahoma Extension Division during the fall of 1933.

Members of this association are perhaps familiar with the fact that, after this course had been arranged by the University for the medical profession, the Board of Regents passed a resolution making it mandatory on the Extension Division to admit all cultists to these courses.

At the first series of lectures held in October, 1933, the osteopaths appeared. Realizing the impossibility of continuing the course under these circumstances, your committee met and passed a resolution requesting members of the Oklahoma State Medical Association who had registered for this course to withdraw, and likewise advised the faculty. The result was that the course was indefinitely postponed.

On January 8, 1934, the secretary of this association and your chairman appeared before the Board of Regents and attempted to explain to them the intolerableness of the resolution, and requested that it be rescinded. They were also advised that, if this were not done, post graduate teaching as a University project might as well be abolished, as members of this association cannot be forced to attend meetings in common with other cultists. The Board of Regents then voted to terminate medical extension work.

Your committee was then advised by Secretary-Treasurer Willour that a certain sum of money had been appropriated at the last annual meeting of this association, to be used in post graduate medical teaching. Permission was then obtained from the Council to use these funds to complete the course discontinued by the University. Your committee then reassembled part of the old faculty, and added new members, and the course re-offered under the auspices of the Oklahoma State Medical Association. Mr. Pryor Carson, of Norman, Oklahoma, was engaged as field secretary, under supervision of the committee on Post Graduate Medical Teaching, and the course began on February 12th, and was completed on March 29th. The faculty consisted of eight

members, all of whom were particularly qualified in their special subjects. The course was given in eight centers in northeastern Oklahoma, with a total registration of 103 physicians.

The financial statement* of receipts and expenditures is hereto appended; also program giving the names and subjects of the faculty, the centers in which the lectures were given, and the names of local physicians registered in the courses.

Many favorable comments have been received by the committee, both from local physicians registered and from faculty members; therefore, we recommend the following:

1. That additional courses be given in other centers during the fall of 1934 and the spring of 1935.
2. That, instead of individual registration, the county society of each center desiring the course be taxed a proportionate amount of the total expense, thus making it available to all members of their society and thereby greatly reducing expense of the State Association in solicitation and collection of fees from individuals.
3. That a faculty in units of three traveling together and giving two lectures each during one afternoon and evening in each center would also materially reduce the expense of the course. The details of this, of course, should be left to the committee on Post Graduate Medical Teaching.

This committee wishes to commend Mr. Pryor Carson for the very efficient manner in which he performed his duties as field secretary.

Respectfully submitted,

HENRY H. TURNER, M.D., Chairman,
H. C. WEBER, M.D.,
WANN LANGSTON, M.D.,

*Owing to the incompleteness of the audit of receipts, the financial report cannot be published until the May issue.

REPORT OF COMMITTEE ON PUBLIC POLICY AND LEGISLATION.

During the past year the Legislative Committee has been called upon to do but very little, there being no session of the State Legislature. We have, however, tried to express the sentiment of organized medicine in Oklahoma, relative to national legislation. Our entire congressional delegation was sent the following telegram:

"The medical profession of Oklahoma appeals to you to support the President's program, regarding the benefits to veterans with service connected disabilities, but oppose free medical care and hospitalization to non-service connected cases."

We have also circularized the congressional delegation relative to the building of more veteran hospitals, asking them to oppose any such move, as it was our belief that the present hospital facilities were sufficient.

We have taken up for consideration the Basic Science Law, and have prepared for submission to the Council and House of Delegates a proposed bill governing this phase of qualifications of applicants to practice the healing art.

Respectfully submitted,

J. S. FULTON, Chairman;
FOWLER BORDER,
HORACE REED.

REPORT OF COMMITTEE ON STUDY AND CONTROL OF CANCER

Cancer Situation Today: Because cancer is second only to heart disease as a cause of death, it forces the attention of the medical profession and the people to consider it as an important common problem.

Even in the absence of accurate knowledge as to etiology, present day facilities and information make possible great reduction in the mortality rate. This can be accomplished in two ways: (1) Early diagnosis and proper treatment; and (2) prevention by removal of areas of chronic irritation which predispose to cancer. To impress these facts the following information is sufficient. The American College of Surgeons has collected over 26,000 cases of cancer carefully diagnosed and well five years or more after treatment. These are from but a small number of clinics. The value of prevention is seen in such reports as that of Wm. P. Graves, who found in over 5,000 cases where the cervix was either cauterized or amputated no cancer developed.

Purpose of Cancer Work: If any material progress is to be made in the field of cancer control, it is at once apparent that every doctor in our state must know all that is known about cancer. Proper dissemination of knowledge about cancer within the medical profession is, therefore, obviously desirable.

The public is already familiar with diseases experienced in late cancer. For their own good, they should know the striking benefits of prevention, early diagnosis and proper treatment. But they should also know what they must do to prevent cancer, and if they are unfortunate, what they must do in order to have an early diagnosis and proper treatment. Dissemination of this knowledge to the public is, therefore, obviously desirable.

Your committee considers such dissemination of cancer knowledge to the profession and advice to the public extremely valuable. However, it is thought that work within the profession is of first importance at the present time, with efforts in advice to the public to be governed by the progress made in the profession and by local situations.

Organization of Cancer Work: In all efforts in the cancer situation, it is strongly felt that the profession should maintain firm control in order to keep any problem within ethical and useful limits, and to adapt it to the particular medical needs of our state. This can be best accomplished by having such control carefully protected within the State Medical Association and its component county societies.

It is, therefore, felt that the committee on the Study and Control of Cancer of the State Association should be the active centralized directing body for any work within the field of cancer in our state. It is further felt that membership in this committee should be for a term of several years and that only one member be replaced at a single time, in order that there will be continuity of thought, organization and work.

Of the various agencies of assistance to our State Association in cancer work the American Society for the Control of Cancer is certainly of the first importance. It is well organized, and its policies are dominated by doctors. It has a history of great usefulness. Through its field representatives and state chairman, we have close contact with the plans and organization of cancer work throughout the world, thereby gaining the advantage of their experience over a rather long period in this field, in addition to the opportunity of adapting any program which they are sponsoring to our particular needs. Free of charge, it furnishes us much valuable assistance: literature,

both for the medical profession and the public; lantern slides, films and projection equipment; newspaper releases; and suggested outlines for cancer programs.

It, therefore, is recommended by your committee that the State Medical Association cooperate as fully as possible with the work of the American Society for the Control of Cancer. In this direction it is strongly felt that the state chairman for this society should be a minority member of the committee of the State Association.

It is generally agreed in cancer work that efforts in the medical profession itself are of primary importance, that the family physician is the key man in any endeavor to control cancer, and that the county or district medical society is the logical unit for the exchange of cancer information. Efforts to advise the public are secondary to this.

Cancer Work 1934: Consequently, in the work of cancer control in 1934, it has been the plan of your committee to have medical and public meetings of the various county medical societies, with the speakers and the committees chosen from the local men. Suggestive programs and material have been made available from the files of the American Society for the Control of Cancer. The organization of these meetings has been made possible by the work of Mr. L. W. Kibler with the Department of Public Relations of the State University. Though this work is just getting well under way, many county societies are requesting such programs in their vicinity, some preferring to combine with adjoining counties and having a larger meeting. In accordance with a five year plan of the American Society for the Control of Cancer to devote one year's work to a certain organ, the programs this year concern cancer of the uterus.

Future Work: It is hoped that in the future the interest of the medical profession will be greatly increased in this problem, and that with a common recognition of the need for advice to the public, additional efforts can be made, such as public meetings, broadcasts, distribution of literature for the public, newspaper releases, addresses to clubs and schools and more concentrated effort in nursing and medical schools.

Financial Necessities: A reasonable amount of money is absolutely necessary for any cancer work. Some of the basic items to be considered are expense of handling equipment, such as projectors and literature, clerical expense in organization work, and the traveling expenses of the non-medical members of the program. This year and last year, in order to meet these requirements, it has been necessary to charge each county society \$12.00 to defray actual expenses. As there is always some misunderstanding about the use to which such money is placed, it is strongly recommended that an appropriation be made by the State Medical Association of not less than \$250.00 for meeting the actual expenses of the yearly cancer work. In this way the expenses will be centralized and will undoubtedly encourage many societies to take advantage of the programs who have not formerly done so.

It is hoped that at some future date gifts will be made to the State Medical Association to be held in trust for this sort of work, but at the present time it is necessary that either the component societies or the State Association shall meet the actual expenses, and the State Association is the logical place for efficient disbursement.

WENDELL LONG, Chairman,
E. S. LAIN,
JAMES STEVENSON.

ABSTRACTS « REVIEWS « COMMENTS AND CORRESPONDENCE

PLAN TO LOOSEN UP FROZEN CREDITS OF THE MEDICAL AND LEGAL PROFESSIONS

The Lawyers Club of Los Angeles Committee On
Professional Men's Credits, Los Angeles
February 2, 1934

To the Editor: Enclosed is a copy of a resolution of The Lawyers Club favoring a plan to loosen up the frozen credits of the medical and legal profession. As rapidly as we are able we are getting it to organizations of both professions and to such members of Congress as we can reach. We should appreciate your endorsement and such publicity as you can give it.

The plan is to have a Federal agency prescribe a standard form of obligation to be executed by the client or patient, payable in five years, to be limited to debts arising from bona fide professional service, to be endorsed by the practitioner, then to be discounted by the agency. The doctor and lawyers spend freely in proportion to their incomes. A great deal of money would be put into very general circulation and the government would get most of it back.

Our patients and clients, in the aggregate, are the solid, credit-worthy members of the community. They have needed professional service during the emergency. They need it now. They find it all but impossible to get cash with which to pay. We cannot do our full duty to the public unless we have money to provide facilities and to provide for our dependents.

We hope you can support this measure editorially and urge your professional groups to send appropriate resolutions to their Congressmen and Senators and supplement such effort as far as possible. There is a real opportunity here to give some quick relief without departing too far from sound financial principles:

The following is the resolution:

WHEREAS, the Government of the United States has been extending credit to many classes of the community which have been unable to secure loans or extensions in the ordinary course of business;

WHEREAS, no such aid has been extended to professional men;

WHEREAS, professional men, notably lawyers and doctors, must render service when required regardless of the ability of the client or patient to pay;

WHEREAS, most members of the legal and medical professions have rendered such service during the years of economic depression and now have upon their books charges for such service against clients and patients who are willing to pay but who are unable to secure funds, despite the ownership of property;

WHEREAS, this condition has resulted in placing said professional men in serious financial straits in that they must pay in money for certain of their facilities and the support of their families while un-

able to collect sufficient sums in money from their debtors; and

WHEREAS, the debtors of the professional men, in the aggregate, consist of the most responsible portion of the community, whose credit in the aggregate is the foundation of all local credit;

Be It Resolved by The Lawyers Club of Los Angeles that the Congress and the President be implored to act promptly for the relief of such professional men by setting up a system whereby the debtors of professional men, at least lawyers and doctors, may arrange long credit terms upon obligations that will be discounted at a low rate of interest by a Federal agency, thus, releasing to the professional men amounts of cash in return for the credits which are now but frozen assets; and

Be It Further Resolved that copies of the resolution be dispatched to the California delegation in Congress, the President of the United States and that the committee take such other steps to foster the spirit of the resolution as it or the Board of Governors may be advised.

THE ETIOLOGY OF AGRANULOCYTOSIS

Agranulocytosis is a clinical syndrome that has been frequently reported only within the last few years. Several theories have been suggested as the cause of this highly fatal disease, but a satisfactory explanation has not yet been offered. It is important to consider carefully all the evidence presented. Madison and Squier¹ in an issue of The Journal reported fourteen cases of agranulocytosis in which a definite history was obtained in each case of the use of amidopyrine (in combination with a barbitol preparation, amidopyrine alone, or in one case in combination with other drugs) immediately prior to the clinical discovery of the disease. In treating these cases of agranulocytosis, the Milwaukee investigators endeavored to stimulate granulopoiesis in all of them by means of transfusions, nucleotide or yellow bone marrow extract. In eight cases the further use of amidopyrine was strictly prohibited. In the other six cases the use of amidopyrine was permitted for the relief of pain and restlessness, because its harmful effect was not fully appreciated. Among these six cases the mortality was 100 per cent, in spite of the fact that four of the patients recovered from the acute attack. Among the eight cases in which the use of these drugs was prohibited, only two deaths occurred, and in each of them the granulocytopenia was extreme at the time the diagnosis was made. To obtain further evidence of the ability of these drugs to depress the granulocytes, two patients who had recovered from the acute attack were given 0.3 gm. of amidopyrine and 0.45 gm. of amidopyrine together with 0.2 gm. of amytal, respectively. Within a few hours both of these patients showed a temporary marked depression of the granulocytes. To obtain still further evidence, the authors gave eleven rabbits either allylisopropylbarbituric acid (alurate) with amidopyrine or amidopyrine alone. On the twenty-fifth day, one rabbit receiving an average of 1.3 gm. of

amidopyrine daily showed an abrupt drop in granulocytes, which progressed until its death on the thirtieth day. Preceding its death this rabbit showed a complete absence of granulocytes in the peripheral blood, and at necropsy the bone marrow was found to be absolutely lacking in the cells of the granular series. None of the other rabbits showed the blood picture of granulocytopenia. It is an extremely interesting fact that the period of rapid increase in the number of cases of agranulocytosis reported in the literature coincides almost exactly with the increase in the use of drugs containing a combination of amidopyrine with a barbitol compound. In view of their study, Madison and Squier believe that amidopyrine, either alone or together with a barbitol preparation, is capable of producing primary granulocytopenia in certain persons who are sensitive to the drug. Although of a far different nature, Gillespie's² report in the *Lancet* of February 17 on the alleged dangers of the barbitals again emphasizes the fact that a considerable number of fatalities have in some way been associated with such drugs as barbitol, allonal, pernoston, phenobarbital, dial, and other proprietary brands of barbitol preparations. Nevertheless Gillespie makes the broad conclusions that there is no case on record up to the end of 1932 in which the barbitals, in either a single dose or repeated doses of therapeutic size, have caused death in the absence of complicating factors. His one "possible reservation" is to the observations of Watkins at the Mayo Clinic of thirty-two cases of agranulocytosis, in twenty-four of which either amidopyrine or a barbituric acid derivative had been given before the onset of the granulocytopenia. In an experimental study, Kracke³ reports that subcutaneous injections of benzene and olive oil in sufficiently small doses would result in the development of clinical agranulocytosis in rabbits; he did not succeed, however, in producing the disease in animals by the injection or the oral administration of amidopyrine. Madison and Squier's observations should inspire others to study carefully their cases of agranulocytosis with particular reference to their relation to the use of these drugs. Moreover, their work again shows that clinical observation at the bedside of patients is a fruitful field for research.—*Jour. A.M.A.*, March 10, 1934.

1. Madison, F. W., and Squier, T. L.: The Etiology of Primary Granulocytopenia (Agranulocytic Angina), this issue, p. 755.

EYE, EAR, NOSE and THROAT

Edited by Marvin D. Henley, M.D.
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Sympathetic Scleritis. Bernard Samuels, M.D., New York. *Archives of Ophthalmology*, August, 1933.

A microscope study is made of preparations from ninety-four globes, which had been injured and produced a subsequent sympathetic inflammation in the other eye, to determine the manner in which the sclera may be involved and the relationship of this involvement to that of the uvea. The uvea is the seat of the primary lesion but in severe cases of sympathetic ophthalmia the inflammation may become so general that there is present a uveo-scleritis. No other disease is liable to produce such a terrific infection of the sclera as in sympathetic ophthalmia. Scleritis itself is one of the most hopeless diseases of the eye. In sympathetic ophthalmia if there is no increased tension to account for the unbearable pain

then an accompanying scleritis or tenonitis may well explain it. Lymphocytes and epithelioid cells characterize the nodules of the specific infiltration of sympathetic ophthalmia. Previous observers have recorded the presence of lymphocytes along the retinal vessels, specific nodules in the layers of the retina, infiltration in the sheaths of the optic nerve and rarely among the nerve bundles and E. Fuchs states that the inflammation may extend into the sclera. Usually scleritis occurs between the margin of the cornea and the point of insertion of the tendons of the extrinsic muscles for it is here that there are located many blood vessels. In sympathetic ophthalmia the most frequent site of involvement is around the optic nerve and in the region of the macula. The sclera and choroid posteriorly are in close contact because of the long and short posterior ciliary arteries and nerves which hold them together as they pass into the eye. This intimate relationship explains in part the reason that there was usually destruction of scleral tissue when the choroid was affected. This destruction of the sclera in some instances was so marked that the thinning of the fibrous tunic covering the eyeball was easily discernible. Diffuse interstitial scleritis is characterized by densely packed lymphocytic infiltration which separates the inner layers of the sclera. This sometimes extended over quite an area being more pronounced around the optic nerve and the macular region where the infiltration of the choroid by continuity of tissue caused scleral involvement. It was noted that this disease spreads outward from the vascular layer of the choroid and not inward. Circumscribed interstitial scleritis is characterized by small foci situated well within the layers of the sclera. No point of contact could be found between these foci and the infiltration of the choroid in contradistinction to diffuse internal scleritis. Diffuse interstitial scleritis showed a large increase in the number of lymphocytes in the middle and outer layers. It was thought that the cells escaped through the walls of the emissaria and wandered by the way of the lymph spaces into the tissues. In external scleritis the specific infiltration reaches the outer ends of the emissaria and spreads along the vessels of the episclera. An external and internal scleritis both may be present at the same time. It was found that after enucleation some of the orbital tissue showed infiltration. During operation then care should be taken to excise as much of the optic nerve and adjacent orbital contents as possible. Radium therapy is suggested as good postoperative treatment.

An Overlooked Factor In Susceptibility to the Common Cold. Dr. Arthur E. Ewens, Atlantic City. *The Laryngoscope*, January, 1934.

A four hundred and fifty million dollar annual economic loss to the United States is certainly of vital interest to the medical profession. This financial loss (statistics of the U. S. Public Health Service) as well as many refractory catarrhal difficulties is attributed to the so called common cold. Although the etiology of the common cold has never been definitely determined it is conceded that anatomical anomalies are contributing factors. The removal of the uvula as a means of fighting the common cold seems to have been neglected by clinical research. Patients who have been carefully checked after staphylectomy have reported either no colds or that they were of less frequency and less severity and also the mildness or entire absence of sinusitis was noted. Dryness of the nasopharynx in an incipient cold was eliminated and relief from catarrhal conditions was discovered to follow this operation. The particular location of the

uvula makes it susceptible to an accumulation of bacteria. Aside from the protection of foreign bodies, when panting, the uvula apparently performs no other necessary function. The main objection to staphylectomy has been and still is the misleading importance of this devitalized appendage. This operation has been performed "many hundreds of times" by the author, at first conservatively and later the entire uvula removed, with none of the dreaded after effects. Ewens concludes from his own specimens of lower animals that the uvula in the human is the remains of a transitory degeneration and has ceased to be of vital importance. It is impossible before operating to judge the extent to which the uvula is responsible for the common cold. The small uvula as well as the elongated type increases susceptibility and staphylectomy is considered justifiable in the majority of cases showing chronic infection in the mucous membrane lining. The author considers staphylectomy a minor operation with no unusual skill necessary. A surface application of cocaine or larocaine (Roche) is used with the patient manipulating the tongue depressor. Very little bleeding occurs and this is generally stopped in from one to five minutes. More than two thousand staphylectomies have taken this operation out of the experimental stage and made it a routine operative procedure. The removal of the entire uvula is advised since to obtain these results there is no compromise between staphylotomy and staphylectomy.

A New Intranasal Operation On the Ethmoid Sinus. La Fayette P. Monson, M.D., San Francisco. Archives of Otolaryngology, January, 1934.

Schematic drawings of the different stages and a microphotograph of the completed operation aid in the presentation of a new surgical method for the care of the diseased ethmoids. In the radical operation as described by Hajek, Mosher, Sluder, Ballenger and Coffin the middle and superior turbinates and the anterior and posterior ethmoid cells are removed. The conservative operation as described by Pratt or Halle removes the ethmoid cells lateral to the middle turbinate and preserves part or all of the middle turbinate. The not unusual complaint after a conservative operation is that of stuffiness in the nose due to the fact that a hypertrophic, bullous type of middle turbinate has not been removed. In the average radical operation there is a great destruction of nasal mucous membranes. The outstanding point of this new method is to avoid injury to the mucous membranes so that when the patient has completely recovered the nose is normally moist, is not adversely affected by a sudden change of temperature and is not being continually irritated by a dried scab and crust formation. A preliminary submucous resection is many times advisable in order to give the operator a satisfactory view. The upright position of Mosher is used allowing the operator to work in a direction almost parallel to the floor of the anterior fossa and so lending the greatest degree of safety to the patient. A sedative is given about thirty minutes before the operation thus helping to avoid fainting, hysteria and collapse for which the local anaesthetic usually receives the blame. The local anaesthetic used is equal parts of twenty per cent cocaine and 1:1,000 epinephrine hydrochloride. Tampons are left in place twenty minutes. A linear incision at the lower border of the middle turbinate is made and a submucous resection of the middle turbinate is done with a septal elevator. The entire middle turbinate is removed, care being taken not to injure the elevated mucous membrane or the superior turbinate. The ethmoid cells are now removed until the anterior wall of the

sphenoid sinus is plainly visible. Avoiding injury to the optic nerve, the bony partitions superiorly and laterally are broken down and removed with the sinus mucous membranes. If the uncinate process and the agger cells are markedly hypertrophied a chisel is sometimes used. Particles of bone and other debris are removed with applicators and nasal forceps. The superior turbinate is fractured laterally with a nasal forceps. The space between the medial wall of the ethmoid capsule and the septum is packed with iodoform gauze moistened with compound tincture of benzoin for twenty-four hours and afterwards the operated field is treated with mentholated oily drops. Adhesions must be prevented from forming between the septum and the field of operation until the upper and lateral regions are covered with normal mucous membrane. Fifty-nine such operations were performed without any serious untoward sequelae. It was found that in about twenty-five per cent of the cases that the superior turbinate became markedly hypertrophied after the operation filling a large part of the newly created space, sometimes attaining the size of a normal middle turbinate.

Progressive Ulcerative Reticulosis of the Palate. I. Simson Hall, Edinburgh. The Journal of Laryngology and Otology, January, 1934.

Thirteen cases have been collected from the literature. The case here reported is that of a female, age 32, who had been married twelve years, was the mother of six healthy children, had never been seriously ill and was in good health until eight weeks before she was admitted to the Royal Infirmary, Edinburgh. Her chief complaint at this time was sore throat. What seemed to be a typical luetic ulcer appeared on the hard palate and in spite of a negative Wassermann the patient was subjected to anti-luetic treatment. After three weeks the ulcer did not improve and the possibility of a carcinoma or tuberculosis was considered. At this time her general physical examination was negative except for a daily rise in temperature (after anti-luetic treatment had been given) which persisted until her death four weeks later. The ulcer continued to increase in size but showed no definite characteristic such as "rolled" edge, serpiginous outline, or punched out appearance. The tissues of the soft palate were more extensively destroyed than the bone at this time. There was no local or general adenopathy. Repeated biopsies ruled out carcinoma and tuberculosis. The patient suffered practically no pain or discomfort up until the time of her immediate death. At about eleven weeks from the beginning of her sore throat there appeared a painless swelling over the bridge of her nose in the center of which was a black, tenacious sphacelus. Repeated blood examinations eliminated agranulocytosis and mucodermal manifestation of Leishmaniasis. Antimony tartrate produced such a terrific reaction that it was not repeated. Radiotherapy was next tried without avail. By this time the sphenoid air sinuses were visible through the palatine ulcer. A short time before her demise bullae were present in the right groin and the skin of the thorax. Nodules also appeared. Post mortem examination showed the immediate cause of death to be septic leptomeningitis and not sloughing, haemorrhage or toxemia. There showed a pulmonary congestion and oedema and a few white, firm nodules which favours a blood-vascular method of extension theory. Nodules were also present in both kidneys. The cells in the nodules were not unlike those which occur in multiple myelomatosis and malignant lymphogranulomatosis (Hodgkin). A survey of all the cases show that the most efficacious

treatment is similar to that employed in a malignancy i. e., deep radiotherapy and radium therapy. Rarely does this stop the progress of the lesion and in from four months to two years death ensues. There is no positive evidence in support of several theories advanced as to the etiology. Included in the differential diagnosis are: tuberculosis, lupus, leprosy, syphilis, yaws, Leishmaniasis and its allied conditions and the different malignancies. An extensive bibliography, microphotographs and drawings in color complete the article.

DERMATOLOGY, X-RAY AND RADIUM THERAPY

Edited by William E. Eastland, M.D.
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Sarcoma of Cheek Following Tricho X-Ray Treatment for Hair on Face: Report of Case, Ira I. Kaplan, M.D., New York. Journal American Medical Association, Vol. 102, No. 8, February 24, 1934.

In reporting a case of radiodermatitis that resulted in sarcoma of the cheek, Kaplan has shown the well-known fact that early in the history of X-ray therapy its dangers were not known. There is a beauty parlor system known as the Tricho Company which advertised the removal of hair on the face of women by repeated X-ray exposures. All dermatologists are thoroughly familiar with the fact that this procedure is one that has been abandoned. The amount of X-ray required to cause a permanent epilation of hair is usually injurious to the skin in that it causes a radiodermatitis.

The particular case reported here was given treatment by the above mentioned beauty parlor in 1926. In the spring of 1933 exposure to the sun stimulated a growth on the right cheek. A diagnosis of epithelioma was first made. When the case came to operation and the tumor mass was removed the pathologist revealed a spindle cell sarcoma. This is rather unique because most cases result in carcinoma rather than sarcoma.

The author concludes this article by emphasizing a statement well known to radiotherapists; namely, that changes may occur many months or even years after over-dosage of X-ray or radium. He further states that not only should beauty parlors abstain from the use of X-ray but that physicians who are not specially trained should not attempt X-ray therapy.

Experimental Aspect of Fixed Eruption Due to Alurate, A Compound of Allonal, Adolph B. Loveman, M.D., Ann Arbor, Mich. Journal of the American Medical Association, Vol. 102, No. 2, January 13, 1934.

It has been noted that certain drugs such as phenolphthalein and arsenic produce an eruption of the skin that lasts considerable time beyond the administration of the drug in certain cases. This prolongation is termed "fixed eruption." Inasmuch as the drugs that produce such a condition are very limited, the author adds one more drug to the list; namely, alurate.

In substantiation of this claim he cites a definite case that has been worked out very carefully in order that no other chemical could be in any way responsible for the fixed eruption.

The author demonstrated that the barbituric acid in alurate was the only one responsible for the fixed

eruption by giving various other barbituric acid compounds; hence, the patient was able to use other similar drugs without fear of eruption.

The Practical Application of Radiosensitivity and Tumor Grading, Douglas Quick, New York State Journal of Medicine, December 1, 1933.

Quick has brought to the general practitioner an intelligent survey of the relationship between X-ray and radium treatment and tumor grading; also, this grading concerns surgical treatment. Set out below are enumerated various significant facts that are of great value to the radiotherapist and surgeon:

1. Fully differentiated growths are radioresistant (not yielding readily to X-ray or radium). On the contrary, anaplastic or non-differentiated growths are the most responsive to X-ray and radium.

2. Grading of tumor (I, II, III, IV) is a histological problem, but the determination of radiosensitivity is a combination of the former with the clinical picture.

3. Grade I, is the fully differentiated tumor and more radioresistant, whereas grade IV, is non-differentiated and radiosensitive. Grades II and III are intervening steps.

4. Grade IV tumors metastasize early and extensively by either lymph or blood stream.

5. Grade IV growths are not adapted to surgical intervention on account of the active metastatic quality, but should be treated by radiation due to their radiosensitivity.

6. The "tumor-bed" influences the degree of radiosensitivity in addition to the cell characteristics.

7. Pre-operative radiation excels post-operative radiation due to scar tissue interference and reduction of blood supply to the tumor-bed.

8. A tumor surrounded by fat reduces the radiosensitivity, as evidenced in large, fat breasts.

9. Metastatic tumors are usually less radiosensitive than the primary growth.

10. An old growth, of equal size, is more radioresistant than a young one.

11. Infection of a tumor plays a major role, making the growth radioresistant in direct proportion to the degree of infection.

12. The general physical condition of the patient, especially in regard to anemia, has considerable relationship with success or failure in radiotherapy.

13. Insufficient treatment by radiation or improperly given not only fails to affect a cure, but actually makes the tumor cells radioresistant that were formerly sensitive.

14. Grades II and III must be treated by both external and implantation radiation.

15. Every new growth should be considered as a whole, taking it from the standpoint of tumor grading, clinical appearance, history and the patient's general condition.

Blastomycosis With Report of Three Cases, Wright Clarkson, M.D., and Allen Barker, M.D., reprinted from Virginia Medical Monthly, May, 1933.

The authors state the occurrence of blastomycosis is more common than ordinarily considered. For that reason and in the hope of stimulating interest in this condition they present their article citing several

cases. One of the cases which is cited is that of a negro, which is somewhat of a rarity. The etiology is reviewed, stating that it is a parasitic disease and the symptoms of the cutaneous manifestations are reviewed.

They also call attention to the fact that systemic blastomycosis is not infrequent, and that in order of frequency the following structures are involved: the lungs and the bones. Of course, these structures are second and third in frequency as compared to the skin.

In cases of systemic involvement the prognosis has shown that nearly 100% of cases are fatal. Different methods of treatment are considered and this paper reveals that the authors have found X-ray treatment to the affected areas, and massive doses of potassium iodide internally produce the best results.

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
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Struma Lymphomatosa Hashimoto. Laurence L. Howard, M. D., Great Falls, Montana. *The American Journal of Surgery*, March, 1934.

In 1931, Graham and McCullagh reported four cases of thyroid disease designated struma lymphomatosa or atrophy and fibrosis associated with lymphoid tissue in the thyroid. Hashimoto, in 1921, had reported four cases of similar nature.

Two similar cases have been recognized at the Peter Bent Brigham Hospital on the surgical service. Since the condition appears to be rarely recognized, or rarely given this interpretation, these cases are reported.

All reported cases have occurred in overweight women. In the series of Graham and McCullagh the average age was fifty-five years. A history of goiter in the family is not usual. Symptoms of hyperthyroidism are absent. Symptoms complained of can usually be ascribed to compression by an enlarged hard thyroid and are not sufficiently distinctive to be of diagnostic importance. Chronic or focal infections, tuberculosis and syphilis appear to play no part. Disturbances of the cardiovascular apparatus have not been associated with the course of the disease. Subtotal thyroidectomy is likely to be followed by hypothyroidism and convalescence is notoriously slow.

The clinical diagnosis is often one of malignancy because of the hard consistency of the thyroid gland. However, the enlargement is bilateral, uniform, without nodules and without notable deformity of the lobes. The gland has close attachment to the trachea without adherence to surrounding structures.

There is an absence of symptoms other than those that can be ascribed to compression of the trachea. Huskiness of the voice and enlargement of the neck are the usual complaints. There is an absence of involvement of regional lymph nodes. Impairment of general health and signs of local inflammation are not present.

The condition has at times been associated with Riedel's struma. However, in striking contrast, Riedel's struma more nearly approaches a true inflammation; it occurs in persons under forty years of age; the thyroid is adherent to surrounding structures even to encasement of the carotid sheath and

its contents; it is also a more deforming lesion in that the outline of the thyroid lobes is lost and it is often a unilateral or localized process; often Riedel's struma is surgically irremovable.

In struma lymphomatosa examination of the thyroid gland shows uniform bilateral enlargement of the lateral lobes and isthmus with relatively normal contours. The gland is usually several times larger than normal. The capsule is intact and not adherent to overlying structures. On cross section the tissue is white, firm or hard, and shows moderate resistance on cutting. The cut surface is divided into irregular areas of firm white tissue by fibrous trabeculae. No normal thyroid tissue or colloid material is usually recognized. There are no nodules, tumor masses, adenomas, cysts, areas of calcification or necrosis.

Microscopically there is well-marked atrophy and degenerative changes in the epithelium, marked diminution in colloid, extensive lymphoid infiltration with areas showing hyperplastic germinal centers. There is thickening of the fibrous capsule of the gland and a rather marked increase in interlobar and interlobular connective tissue. Thyroid acini are small, few in number and contain very little colloid. Mitotic figures are not observed.

Comment: This extremely interesting condition of the thyroid gland is probably not as rare as has been supposed. I, myself, have had one case in which the clinical examination was such as described by the author of this article. There was no evidence of hyperthyroidism. The thyroid gland was enlarged symmetrically without any nodules. At first we thought that we were dealing with sarcoma of the thyroid, but after careful microscopic study of the specimen by Dr. Hugh Jeter, pathologist at University Hospital, and also by Dr. Allen Graham, of the Cleveland Clinic, it was proven to be a typical case of struma lymphomatosa. Her subsequent course has proven that she did not have sarcoma. Like the other cases, her convalescence has been very slow and she has shown definite evidence of hypothyroidism, necessitating the administration of thyroid extract. This patient was operated upon four years ago and has been under close observation since that time. The case has never been reported.

—LeRoy D. Long

Out of Two Thousand Brain Tumors That Ought To Be Operated In France Each Year, Only Five or Six Hundred Are Operated. In More Than a Thousand Cases the Diagnosis Is Not Made (Sur Deux Mille Tumeurs Cerebrales Qu' On Devrait Operer En France Chaque Annee, On N' En Opere Que Cinq a Six Cents. Plus D'un Millier De Tumeurs Ne Sont Pas Diagnostiquees. By T. de Martel, Paris.

Through the courtesy of Dr. de Martel I received several weeks ago a printed leaflet with the above heading. At the bottom of the last page it bears the name of the printer ("Imprimerie du Palais, 20, rue Geoffroy-l'Asnier, Paris"); but there is no indication that it is a reprint of a published article. Since it was accompanied by a number of reprints of exhaustive articles, I assume that the author has chosen this way of epitomizing some significant phenomena in connection with the diagnosis of brain tumors. The article is so concise and so pregnant with pertinent facts that I shall translate it in full.

"Brain tumors are not rare, as is generally be-

lived. In Paris alone four or five hundred are operated each year.

"Nevertheless, physicians hardly think of them, and the existence of a brain tumor is suspected but rarely at the beginning. It is largely for that reason that operative results are not yet what they ought to be.

"The average physician does not think of a tumor of the brain unless the classical symptoms are fully apparent, and even then he lulls himself with the hope that he is dealing with a gumma, and often wastes precious time in antisyphilitic treatment. Now, it is a significant fact that, practically, there is never a gumma of the brain.

"The practitioner, even well prepared, thinks that a tumor of the brain ought to announce itself by headache and choked disc; above all (*'pardessus le marche'*—idiomatic) some vomiting. But if the vomiting is not frequent he thinks of everything except an intracranial tumor, and he generally makes the diagnosis of a gastro-intestinal affection.

"If there is choked disc alone he does not recognize it until the vision is greatly compromised, because it is not the common practice to systematically examine the fundi of the eyes; it would be, however, a good practice.

"It is headache, isolated and persistent, which most often directs the investigations of the physician toward the cranial cavity, although he does not fail to make plausible explanations of it without considering the hypothesis of a tumor of the brain.

"But headache is often absent, particularly in children where the bones of the cranium are not firmly united, and easily separate from the pressure of an intraventricular hypertension.

"In sum, the classical symptomatic triad of brain tumor is rarely complete, and the existence of any one of these symptoms demands a proper examination of the patient in order to determine whether there is an intracranial hypertension.

"Besides, it is necessary to remember that in many cases the beginning is marked by signs entirely separate and apart from the classical triad, but which, nevertheless, ought to make one suspect the existence of a tumor of the brain. Some of these unusual modes of beginning I wish to indicate here:

"1. A child which vomits without reason, often in the morning, ought to be suspected of having a tumor of the brain, especially if he has a big head that he sometimes holds in a fixed attitude—forward, to one side, backward—and his fundi ought to be examined (numerous personal observations).

"2. A young child not yet able to read loses his vision almost without perceiving it, and especially without those about him perceiving it. He plays as usual without complaint, notwithstanding his cranium may contain a tumor, and that sometimes the position in which he constantly holds the head ought to attract attention (personal observation).

"3. A child who always falls on the same side without reason, especially if he has a big head that he often holds in a fixed position, ought to be suspected of having a tumor of the brain (personal observation).

"4. A man who, in walking, always strikes obstacles on the same side, or who, in driving his automobile, always runs against objects on the same side, ought to be suspected of having a tumor of the brain (very beautiful personal observation), and his visual field ought to be measured.

"5. A man who, in good health, develops Jacksonian epilepsy in a foot, in a hand, in the face, ought to be suspected of having a tumor of the brain (numerous observations).

"6. A young woman who vomits every morning, who has had headaches for years, and in whose case all these symptoms become much more pronounced when she becomes pregnant; who has probably had a cholecystectomy or an appendicectomy without relief, ought to be suspected of having a tumor of the brain (personal case).

"7. A man who, up to that time, was perfectly normal, changes character, ceases to take interest in his business, loses his way easily, forgets his appointments, and when reminded of these peculiarities dilly-dallies and jokes, ought to be suspected of having a tumor of the brain (several personal cases).

"These signs attract the attention of physicians and attending personnel of a neuro-surgical service who constantly see patients of the same type. Quite often the nurses in such a service make a diagnosis on the wing (*au vol*) nearly as well as the physicians. These same signs may have but little or no significance, even for the well informed physician, who never sees this class of patients.

"As soon as the suspicion is awakened, it is necessary to proceed to a complete examination.

"1. Neurological Examination. It will often be negative. Lumbar puncture will nearly always show an albumino-cytologic dissociation.

"2. Ophthalmologic Examination. It ought to be able to reveal three important things: Papillary oedema indicative of a tumor; a primitive optic atrophy which will prove that direct pressure is exerted upon the chiasm of the optic nerve (of great localizing value in anterior tumors); a homonymous or bitemporal hemianopsia (of great localizing value); the homonymous (*l'homonyme*) means temporo-occipital tumor; bitemporal means compression of the chiasm and often accompanies primitive optic atrophy.

"3. Radiological Examination. It will be able to show: An abnormal vascularity of the cranium (meningioma); a thickening or thinning of the posterior border of the lesser wing of the sphenoid (meningioma of the lesser wing); finger-like impressions and a flattening of the sella turcia (hypertension); an enlarged and distended sella turcia (tumor of the hypophysis)."

"Ventriculography. It is this examination in which the physician ought to put great confidence; through it alone it is usually possible to make a diagnosis and a localization. Properly done, in the case of a patient still in good general condition, it is a safe procedure. It makes it possible to affirm the existence of a tumor and to indicate its site. It ought to be demanded in all doubtful cases, which are very numerous.

"It is in proceeding thus at the Neuro-Surgical Institute (*L'Institut Neuro-Chirurgical*) that we have been able to operate early on a certain number of patients, with a considerable percentage of operative cures, during the last three years, making a striking contrast when compared with the bad re-

sults in patients who, after dragging along for years without diagnoses, were subjected to late operations."

—LeRoy Long.

One Must Not Cut a Melanoma (Il Ne Faut Pas Mettre Un Bistouri Dans Un Melanome). By Paul Chevallier and A. Fiehrer, *La Presse Medicale*, January 10, 1934.

This short, but extremely important article, begins with the statement that a melanoma can be destroyed in one seance by the use of the modern electric cautery, but that this is not generally known ("On sait qu'un melanome se detruit en une seule seance par les cauterres electriques les plus perfectionnees. Cette notion n'est pas assez connue").

A young man of 25 years had a melanotic nevus in front of the ear from birth. Becoming a little larger, it was excised. Five months later there was recurrence with nodules behind the mandible and all over the side of the neck. At the end of a year there was a tumor the size of a large walnut resting upon a firm, deep, plurilobular mass the size of the palm of the hand. At the same time there was a melanotic mass the size of a one franc piece in one gluteal region. The situation was obviously hopeless.

Comment: Too much emphasis can not be placed upon the necessity of quick and absolute destruction of a melanotic tumor if any operation at all is undertaken. It appears that the best way to do this is by the employment of some perfected type of cautery. It is pretty clear that excision by the employment of the ordinary scalpel is a dangerous procedure, and according to good authorities, such as Francis Carter Wood, it is just as dangerous, if not more so, to treat a melanotic tumor by radio-active agents.

—LeRoy Long.

Glandular Cheilitis—A Pre-Cancerous Lesion of the Lower Lip (La Cheilite Glandulaire—Etat Precancereux De La Levre Inferieure). By MM. Touraine and Solente. *La Presse Medicale*, February 3, 1934.

There is a reference to a description by Richard Volkmann of Cheilitis Glandularis Apostematosa in 1870 in which it was considered a special chronic affection of the lower lip, characterized by a hyperplasia of the mucous glands, including the excretory ducts; and by a leukoplasia of the labial mucous membrane, with superficial suppuration.

There are also references to a report of Sutton in 1909, of Puente and Acevedo in 1926, and by Bejarano in 1928, all of whom have called attention to a simple form without suppuration. The authors remark that in Spain, especially, it is insisted by physicians, that this condition is often a precancerous state.

It is concluded that glandular cheilitis presents itself in two distinct clinical forms.

In one of these forms there is alteration of the labial mucous membrane, which is often overlooked without attentive examination.

In the other form it is an inflammatory process, often with suppuration, and a little pain.

The site of the lesion is fixed. It always occupies the middle third of the lower lip at the beginning, and it is practically always confined to the vermillion border—that is, the mucous membrane visible when the lips are closed.

On examining the lip, there are tiny red or pur-

plish spots not usually larger than the head of an ordinary pin. There may be a number of these spots, each one appearing in the lip like a stone in a setting.

The beginning is always insidious, without functional disturbance. However, according to Puente, there is often a history that the patient has always had delicate lips which crack and become ulcerated easily.

It appears that most of the patients are between the ages of twenty and forty, but one patient was only sixteen years of age, and, at the other extreme, there was one patient seventy-five years of age.

Up to this time the condition seems to have been very rare, but the authors believe that it is more common than is usually suspected, the explanation being that, because of its insidious onset, it is frequently overlooked.

Emphasis is placed upon the importance of the disease because of its probable relation to subsequent cancer of the lip.

In the treatment, it appears that radiotherapy has given the best results.

—LeRoy Long.

Tuberculosis of the Uterus and Fallopian Tubes With a Report of Two Cases Treated With X-Ray. By Edwin M. Jameson, Saranac Lake, N. Y., in *American Journal of Obstetrics and Gynecology*, February, 1934.

This author has reviewed the various treatments employed for tuberculosis of the uterus and the fallopian tubes, at the same time reporting two cases treated with small dosages of x-ray. He points out that there are several difficulties connected with a proper evaluation of the efficacy and results of the various methods of therapy now available. These difficulties are principally the small number of cases encountered by a single individual, the frequent impossibility of making an accurate diagnosis due to the present conservative method of treatment of salpingitis, and lastly, the small number of patients treated by each method in one individual's experience.

Consequently, he has resorted to the literature which is rather completely reported. The most outstanding result of his work has been the fact that our present methods of treatment are not entirely satisfactory. In a rather large autopsy experience on tuberculous women, he reports that they have never found a healed case of pelvic tuberculosis, and no such cases are reported in the literature.

The methods of treatment employed today can be largely divided into two groups. In one group most of the advocates advise conservatism of various degrees, from a "hands off" policy to conservative surgery. The objections to this method have been the facts that genital tuberculosis very seldom heals itself, and that it is absolutely impossible to determine the extent of the disease macroscopically at operation. The various statistics show that tuberculous salpingitis is bilateral in over 90 per cent of the cases and that uterine tuberculosis in cases of tuberculous salpingitis has an incidence of over fifty per cent.

The advocates of the other method of therapy advise radical surgery with removal of both tubes, both ovaries and the uterus. In addition to the decided mutilation of such an operation in reasonably young

women, the difficulties of such a procedure largely hinges upon the extremely large primary and secondary mortality, the secondary mortality in such cases being over twenty per cent.

There has been some confusion arising from the efficacy of simple laparotomy in the ascitic type of tuberculous peritonitis. There is little dispute about the splendid results from such a procedure in tuberculous peritonitis, but such cases are distinguished as far as the genitals are concerned in that the tuberculosis is entirely serosal in location, and not inside of the tubes.

Of the two methods of surgical approach—that is, conservative and radical surgery, the author is inclined to consider that the end results and salvage is somewhat better with radical procedures. In the light of surgical intervention, he mentions the employment of the posterior colpotomy for diagnosis and treatment only to condemn it as a dangerous procedure. The author then discusses the question of the use of x-ray in genital tuberculosis, pointing out that, as in surgery, there are certain men who advocate heavy radiation, while others believe in more conservative therapy. He reports two cases satisfactorily treated, both being patients with advanced pulmonary tuberculosis.

The author emphasizes the need for greater care in the pathological diagnosis of the cause for pelvic inflammatory conditions. He points out the value of repeated microscopic sections of inflamed tubes, and also the place of guinea pig inoculation.

Comment: Dr. Jameson has reviewed in a rather concise manner a difficult subject, and has only omitted one means of therapy which may eventually be of great value. That is oxygen treatment.

The incidence of genital tuberculosis is ordinarily considered reasonably small in this part of the country, but I feel sure that it is considerably more common than is ordinarily thought, because most infected tubes are not subjected to careful microscopic examination after removal. There seems little question that were such tubes more carefully examined a far greater incidence of genital tuberculosis would be discovered.

Of the various methods of treatment in this disease at the present time, no entirely satisfactory procedure has been obtained, either in medical handling, surgical intervention, oxygen treatment or x-ray therapy. Due to this fact, it seems logical that in the average instance one would best individualize patients and treat them by either a very conservative method, and if this is not efficacious, by radical intervention, probably surgical, keeping in mind that one wants to do as little harm as possible and yet eradicate the infected areas from the pathology involved.

—Wendell Long.

A Comparison of the Aschheim-Zondek and the Friedman Tests in Normal and Abnormal Pregnancy. By Harold C. Mack, M. D., and George H. Agnew, M. D., Detroit, Mich. *American Journal of Obstetrics and Gynecology*, February, 1934.

These authors have reviewed the literature on the accuracy of the Aschheim-Zondek test for pregnancy, collecting from the literature a total number of 8,685 cases, with a reported accuracy of 96.6 per cent. They have collected similarly for the Friedman modification (that is, using a rabbit instead of mice) a total number of cases of 1899, with an average accuracy of 98.5 per cent.

They report that on experiments with 546 Aschheim-Zondek tests and 566 Friedman tests, dividing them into groups of: 1. Normally pregnant patients. 2. Non-pregnant patients. 3. Abnormal or interrupted pregnancies, including hydatidiform mole and malignant chorio-epithelioma. Both the literature and their own experience demonstrates a high degree of accuracy for both methods, the Friedman test being slightly more accurate, as well as easier and quicker.

The following, quoted from the summary of the article, includes the most important observations of these authors:

"In proved cases of normal pregnancy we obtained an accuracy of 97.3 per cent with the Aschheim test and an accuracy of 97.8 per cent with the Friedman method.

"In patients definitely determined not to have been pregnant, we obtained an accuracy of 98.5 per cent with both methods.

"In abnormal or interrupted pregnancy the result of the test should be interpreted with the clinical findings, a negative test signifies either a non-pregnant state or an interrupted pregnancy, a positive test strongly indicates living fetal elements, but due to a temporary persistence in elimination of the hormone, recent interruptions or fetal death cannot be excluded.

"In cases of hydatidiform mole and malignant chorioepithelioma, the amount of hormone excreted is many times greater than that excreted during normal pregnancy. The persistence of positive tests after treatment of these neoplasms strongly suggests continued chorionic proliferation."

—Wendell Long.

A New Method of Reading the Friedman Modification of the Aschheim-Zondek Test. By Max Davis, William Konikov and Elizabeth M. Walker, Boston, Mass. *American Journal of Obstetrics and Gynecology*, February, 1934.

These authors report their work on a new method of reading Friedman modification of the Aschheim-Zondek test. This is based upon the reported study of Bercovitz:

"In 1930, Bercovitz reported certain studies on the pupillary reactions of pregnant and non-pregnant women when a few drops of their own serum was instilled into the conjunctival sac of one eye, under proper lighting conditions, the other eye being used as a control. In the non-pregnant women there was no change in the tested pupil."

In performing the Friedman test by the routine technic these authors recorded the pupillary reaction of the rabbit immediately after injecting the urine into the vein, subsequently checking the result by the accustomed operation upon the animal and the clinical course of the patient.

By these comparisons it was found that the test was accurate 90.6 per cent in the positive reports and 81.8 per cent in the negative reports.

They discuss the percentages of error and the probable reasons, explaining that it is likely that their errors will be much less in a subsequent series, which seems probable.

While this method is not yet as accurate as the original technic, it is still of value in cases where an immediate report (that is, within a few minutes) would be of great clinical importance, as, for

example, in the case of ectopic pregnancy clinically suspected.

These authors hope that the test can be improved, thereby simplifying the test, reducing the time required, and avoiding either autopsy or operation upon the rabbits.

—Wendell Long.

The Treatment of Various Infections by the Intravenous Injection of Animal Charcoal. (Sur le Traitement des Infections Variees par les Injections Intraveineuses de Carbone Animal). Eugene Saint Jacques, Surgeon Hopital Sainte-Jeanne-d'Arc, Montreal. L'Union Medicale du Canada, Feb., 1934.

This interesting article is based, according to the author, upon some experimental work by Professor Coghlin, Macdonald College, near Nontreal.

It appears that Coghlin was interested in the subject of immunity and the means of establishing it. For some reason not made clear in the article, he experimented with the intravenous injection of animal charcoal ("carbone animal") in the treatment of various infections of animals. He and his associates employed it in 738 cases, including infected wounds, infected joints, mastitis, puerperal fever, all in animals, and all of them recovered, without exception.

It is the theory of Coghlin, and his associates, that the microscopic particles of the injected animal charcoal are taken up from the blood by the liver, the spleen and the bone marrow. They believe that the endothelial cells of these structures absorb some of the particles.

The statement is made that there is a rapid augmentation of the number of polynuclear cells after the injection, that they act as phagocytes, and take up by their phagocytic action the balance of the charcoal, together with the bacteria in the blood.

The injection is followed by a moderate fever during the first hour, but there have been no other annoying conditions.

The first human patient had had a furunculosis for 18 months, it dating from an acute gangrenous appendicitis. Coghlin reported that a single injection produced a definite cure, the patient being well a year and a half later.

At this point the information was communicated to a meeting of surgeons several months ago, and the report apparently stimulated Saint-Jacques to try it out in a clinical way.

At the time the article was written, 100 human patients had been treated by Saint-Jacques, something over 200 intravenous injections having been employed. The treatment has been given in various types of infections, and the reporter divides them, as to results, into 3 classes—convincing, good, and non-convincing (les probants, les bons, les non-probants).

In the first class the fever dropped within forty-eight hours or less, and recovery was rapid.

In the second class the fever dropped, by steps, all the patients recovering.

In the third class—the non-convincing—the treatment was supplemented by other medication.

Of the 100 patients treated, 50 recovered rapidly without complication, 31 recovered gradually, but with an apparently shortened convalescence; 19 were non-convincing, they having had, in addition, other types of medication.

The diseases treated are classified as acute and chronic metro-salpingitis, acute puerperal infection, phlebitis, infections after perineal tears, postoperative pneumonia, acute cholecystitis, furunculosis, acute articular rheumatism, acute gonorrheal arthritis, acute gonococcic epididymitis, and pyonephrosis.

The treatment was encouraging in metro-salpingitis. In the cases of puerperal infection it was strikingly effective. It appeared to shorten the course in phlebitis. In infected wounds of the perineum it was very satisfactory. It shortened the course in most of the cases of postoperative pneumonia. In furunculosis it was uniformly and rapidly effective. It seemed to relieve pain in acute rheumatism, but the curative effect was questionable. In gonorrheal rheumatism the effect was satisfactory, and the same was true in gonorrheal epididymitis. The results in the cases of pyonephrosis were good.

In the series there was but one death, and that was in the case of a patient who had tuberculous enteritis, with an inoperable tumor of the rectum. This death is considered incidental, so far as the treatment was concerned, the death being due to the original pathology.

A two per cent suspension of animal charcoal pulverized to the greatest possible extent, is employed. It is insisted that it must be "carbone animal" and not vegetable charcoal.

The average dose is 3 c.c. intravenously. This has been slightly increased in a few instances.

As a precaution, the author directs that the needle and syringe be coated with liquid vaseline before making the injection. If not, the piston will stick.

After these experiments Saint-Jacques is distinctly of the opinion that the method is inoffensive and distinctly effective.

Comment: This is at least an interesting approach to the question of the treatment of infectious processes. The article is not very clear as to the rationale of the procedure, but, reading between the lines, one suspects that it is assumed that bacteria in the blood attach themselves to the particles of charcoal, and that these particles are, as indicated by the author, taken up by the phagocytes. That is good theoretically, but one wonders if it has been proven.

Certainly one would not be justified in the employment of a suspension of animal charcoal prepared in a haphazard manner. It is assumed that the author has facilities for securing it in a suspension of finely pulverized charcoal, and that it is completely sterile, these being elementary and fundamental requirements.

—LeRoy Long.

Experiences With a New Mode of Treating Peptic Ulcer. Felix Cunha. American Journal of Surgery, February, 1934, Page 219.

Several years ago attention was called to a method of treating peptic ulcer by a combination of lipo-protein with emetine. The use of non-specific protein in the treatment of gastric and duodenal ulcer is not new. Experiments with these substances have shown that they exert a definite action on the gastric and intestinal motility. Their effect is supposed to decrease gastric peristalsis. Some men have observed an arrest of pylorospasm. There is also experimental evidence that the injection of foreign protein produces a hyperemia of the gastric mucosa which tends to promote healing of the local lesion. Whether non-specific protein has an influence upon the acidity of

the gastric juice has not been definitely established. Clinically, the use of lipo-protein in place of protein has been found advantageous because its action, while similar, is not attended with a shock reaction.

The effect of emetine upon the gastro intestinal tract has been studied pharmacologically and clinically. It has been demonstrated that this drug is excreted slowly and almost completely by way of the intestinal mucosa. It relaxes smooth muscle and thus reduces pyloric spasm. It has also been contended that emetine acts beneficially because of its antibacterial property. This view is favored by those who consider peptic ulcer an infective process. Its destructive action upon pathogenic organisms is probably not direct, but due to a change in the acid-base equilibrium of the tissues, thus inhibiting bacterial growth. In this respect, emetine supplements the action of the lipo-protein which increases the natural powers to infection.

The method of treatment described in this article seems to me to hold great promise.

The report deals with a series of patients who were treated with a combination of lipo-protein and emetine, known as synodal. The series has been divided into two groups: First, 29 cases in which treatment was completed more than a year ago. Second, 22 cases completed during the past 12 months, which were being checked every three months, but in which varying periods of less than one year had elapsed since completion of treatment.

Each patient was given one amopule of synodal solution intravenously every fourth day for 10 doses. A fine gauge needle was employed. The usual time of administration was about three or four hours after the noon meal in order to avoid the possibility of vomiting, due to relaxation of the cardia. Injection was made with the patient in the prone position, and this was maintained for five minutes because of the complaint of slight dizziness in a few cases. In no case was there a reaction. In none of the author's cases was there need of a second series of injections.

Smoking, coffee, tea and alcoholic beverages were prohibited during the course of treatment.

For the first ten days a bland smooth diet was given. After ten days, meat, such as chicken and lamb chops, was added to the diet.

At the end of four weeks patients were allowed to resume their normal dietary routine.

Except for three patients who were markedly anemic, who were kept in bed for two weeks, all were ambulatory and able to follow their occupation.

Results: In all except two cases, complete relief from pain occurred promptly.

Four of the patients in group one gradually resumed their former excessive use of alcohol without any return of symptoms.

The weight of all the patients increased during the period covering the ten injections of synodal.

The criteria used to determine healing of the ulcer were: (1.) Absence of all clinical symptoms; pain, bleeding, epigastric distress, burning, eructation, etc.; (2.) roentgenological findings showing the changes in the ulcer; (3.) gastricanalysis, definite change in the gastric acidity.

This is a truly remarkable report and I heartily agree with the author that this method of treatment deserves further clinical study.

—LeRoy D. Long.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D.
717 North Robinson Street, Oklahoma City.

Compensatory Changes of Cartilagenous and Osseous Tissue in Ankylosed Joints. From Virchow's Archiv for Pathologische Anatomie, December 20, 1933. Article reported by Dr. S. Milton Rabson, New York City.

The internal construction of the bony framework has a remarkable inheritant ability to undergo changes to accommodate pathological conditions which change its lines of stress and strain. According to Roux, a continuous stress is responsible for the maintenance of normal bony construction.

By means of experiments, the author demonstrates various structural changes in bones in response to altered stress in pathological conditions. Since inflammatory conditions themselves produce atrophic changes during the actual process of ankylosis, the actual cartilagenous and osseous atrophy of disuse were determined by the author by means of the disarticulation of the lower leg due to gangrene of the foot, thus leaving the cartilage and synovia intact over articular surfaces of the patella and femur. Due to an intercurrent disease, the patient came to autopsy some two and a half years later and examination of the above described surfaces revealed an entire absence of cartilage except for two small peripheral islands with the remaining portions covered by pannus and fatty infiltration. Closer examination showed an irregular calcified zone covering the diaphysis with uneven Haversian canal, etc. The pannus, composed of progressive but incomplete calcification among connective tissue proliferation, extended to the diaphyseal ossification and united with it. Some areas presented an osseous surface rather porous but continuous with the underlying diaphysis.

The author gives a more extensive description of a case that met accidental death, giving a history of gradual ankylosis of his left knee following metastatic arthritis of six years duration, in which the tibio-femur union was firm and the patella partially mobile.

Roentgenograph of the patella revealed several interesting facts. Only two small cartilagenous areas were present on the periphery of the articular surfaces of normal and regenerative nature corresponding in location to clinically partial motile areas. The remaining cartilage had been entirely replaced by spongy bone with numerous trabeculae arranged perpendicularly to surface in union with the femur and gradually becoming more parallel as they approached the patellar periphery. The tibio-femur union revealed especially interesting findings. The union between the bones was complete. The trabeculae of the spongiosum, as the framework of the latter, were not only arranged perpendicularly to what formerly were articular surfaces, but were markedly thicker, actually continuous across former bridge of opposing bones and extended for an unusual distance along the shafts of both bones so as to permanently aid firmness to the union. An increased ossification occurred along the trabeculae apparently receiving the greatest stress. The marrow formation, however, did not enter into the bony proliferation. The external appearance is well preserved and gives little hint to the marked internal rearrangement. The degeneration and the absorption of the cartilage is a slow process as to the presented cases. Cartilagenous

"rests" remained present after 2½ and 6 years of disuse

The author concludes from his experiments that in all ankylosed joints, the intervening cartilage disappears in time. When the joint becomes functional again, however, the epiphyseal cartilage returns by regeneration about the remaining cartilaginous "rests" or new cartilage may simply form over the functioning articular surface. He noticed also that not only diminished or absent but increased or unnatural function will produce epiphyseal atrophy. Roentgenographic and microscopic examination showed marked increase in size and number of trabaculæ of the spongiosum, and perpendicular to and dependent upon the amount of altered impinging stress due to pathological changes.

The above was translated from the German article, by Paul H. Rempel, Senior Medical Student, Oklahoma University School of Medicine.

Idiopathic Scoliosis. Stuart H. Scougall. Med. J. Australia, II, 271, 1933.

While some thirty causes of scoliosis are listed, Steindler finds forty-eight per cent of 700 cases falling in the group of "idiopathic scoliosis," in which the cause is unknown. The age of onset is usually between seven and ten years. The usual types are the total left and the combined right dorsal curves. Evidently these spines possess less than the normal resistance to weight bearing. Present opinion is that habitual posture of school life cannot be considered responsible.

As to treatment, prophylaxis should be concerned with nutrition and with recognition and treatment of prescoliotic attitudes. The attainment of a compensatory curve, rather than maximum correction of the curve, is easier, is attained in a shorter time, and is less difficult of retention than maximum correction, and is probably the best choice for the average case.

The objectives of treatment include: (1) mobilization to the point of securing compensation, and not beyond a correction which can be voluntarily retained; (2) redressment to obtain compensation where mobilization alone fails; (3) retention. In the author's opinion retention should be secured voluntarily in most cases; by a support, in a fair proportion of cases; and in a few, by fusion, but not until the child has attained his growth.

BOOK REVIEWS

THE STORY OF CHILDBIRTH (First Edition). By Dr. Palmer Findley, F. A. C. S. Past member of faculty of Rush University, and University of Nebraska. Present member on the advisory editorial board of American Journal of Obstetrics and Gynecology. Published by Doubleday, Doran & Company, Inc., 1933. 376 pages. Cloth, \$3.00.

In this volume the author presents in a simple and very interesting form the development of obstetrics, from that seen in the most primitive life to the art of obstetrics as it is practiced in the present age. In it is portrayed the effects of the supernatural power and the religious superstition governing menstruation, pregnancy, and childbirth, and the difficulty the more venturesome "midwife doctors" had in overcoming this prejudice, and also the prevalence

in our present age of some of these superstitions, such as the effect of maternal impressions, the cause of birth marks, causes of deformity, etc. It gives the primitive methods used by the medical men and midwives of the North American tribes, African tribes, the Japanese, the Germans, and many others. It describes the development of the lying-in hospitals and the hazards encountered there prior to the discovery of the cause of child-bed fever; also the difficulty encountered by those who introduced drugs used for the relief of pain in labor. The author gives considerable space to a description of the modern art of obstetrics, including the relation of the patient and the physician, conception and growth of the foetus, birth control, interruption of pregnancy, prenatal care, labor, and the modern hospital.

This book is plainly written, interestingly narrated, and has 125 illustrations and cuts which add to its simplicity. It can be easily understood by any intelligent, interested patient, as well as by any physician or nurse.

SKIN STERILIZATION.

Below is published the result of an investigation made by Allen, Moorhead and Edgerly, of Columbia's Post Graduate Medical School, as to the efficacy of various amounts specified in skin sterilization.

These results were published in the American Journal of Surgery, Volume 23:2, 371-377, 1934, and will probably be of interest to the members of the profession:

SKIN STERILIZATION WITH 34 TESTED ANTISEPTICS.

(Minus indicates no growth or skin sterilization; plus indicates growth, or no skin sterilization. Figures refer to number of times test was performed.)

	1	2	3	4	5
Alcohol 80 per cent ethyl.....	—	+	+	+	+
Alcohol 70 per cent ethyl.....	—	+	+	+	+
Alcohol 60 per cent ethyl.....	—	+	+	+	+
Alcohol isopropyl.....	—	+	+	+	+
Silver nitrate 2 per cent.....	—	—	—	—	—
Silver nitrate 1 per cent.....	—	—	—	—	—
Benzine.....	+	+	+	+	+
Gasoline.....	+	+	+	+	+
Ether.....	+	+	+	+	+
Tincture green soap.....	+	+	+	+	+
Hydrogen peroxide.....	+	+	+	+	+
Mercuric chloride 0.1 per cent.....	—	+	+	+	+
Merthiolate 1:1000 solution.....	—	—	+	+	+
Merthiolate 1:1000 tincture.....	—	—	—	—	—
Mercurochrome 2 per cent aqueous solution.....	—	—	—	+	+
Mercurochrome 2 per cent acetone-alcohol-aqua.....	—	—	—	+	+
Metaphen 1:500.....	—	—	+	+	+
Metaphen 1:2500.....	—	—	+	+	+
Oxy-quinoline sulfate 1 per cent solution.....	—	—	—	—	+
Phenol 2 per cent.....	—	+	+	+	+
Liq. hexylresorcinolis "S. T. 37".....	—	+	+	+	+
Neutral ariflavine 0.1 per cent solution.....	+	+	+	+	+
Picric acid 1 per cent solution.....	+	+	+	+	+
Liquor cresolis compound 2 per cent.....	—	—	—	+	+
Clymocol.....	—	+	+	+	+
Clymocol 1:50.....	—	—	—	—	+
Iodine 7 per cent tincture.....	—	+	+	+	+
Iodine 3.5 per cent tincture.....	—	+	+	+	+
Iodine aqueous solution 5 per cent.....	—	+	+	+	+
Iodine (Davis).....	—	+	+	+	+
Iodine isotonic solution.....	—	—	—	—	—
Zonite 1:2.....	+	+	+	+	+
Zonite 1:4.....	+	+	+	+	+
Chlorazene.....	+	+	+	+	+

POSTERIOR PITUITARY IN PYELITIS: USE OF EXTRACT FOR ACCELERATION OF DRAINAGE AND RELIEF OF PAIN.

Ward Darley and William B. Draper, Denver (Journal A. M. A., March 3, 1934), discuss the therapeutic value of postpituitary extract in pyelitis. Their series consists of fourteen adults and two children and comprises seven cases with no history suggestive of a previous pyelitis, five of recurrent pyelitis, one of postpartum pyelitis and three of postoperative pyelitis. All these patients presented the well defined symptom complex that is characteristic of pyelitis. The diagnosis could have been strengthened by preliminary ureteral catheterization, but the authors were attempting to evaluate a nonsurgical method of drainage and this procedure would have impaired the validity of their control observations. The solution was administered subcutaneously in doses ranging from 3 to 15 minims (0.2 to 1.0 cc.). The intervals between injections varied from one to eighteen hours, and they were continued until all signs of acute illness had disappeared. In nine of the sixteen cases the usual medical treatment, including alkalis and urinary antiseptics, had been given a clinical trial for periods ranging from two to twenty-eight days (an average of eight days) without relief of pain or other apparent benefit. This is in sharp contrast to the relatively brief interval of from one to four hours (an average of approximately two hours) between the exhibition of the solution and the therapeutic response, as indicated by the relief of pain. The two children in whom the time for relief of pain could not be accurately determined presented similar time relationships to the foregoing cases. The remaining patients were ill for an average of only twenty hours before the exhibition of the solution and consequently in this group the customary methods of medical treatment were not given a fair trial. The striking relief of pain noted was in all cases associated with mitigation of such complaints as urinary frequency, dysuria and nausea. Objective improvement was also apparent following the use of the solution. The fever was lowered in two days or less in five cases. Disappearance or diminution of the pathologic elements of the urine often paralleled the clinical improvement but was not a prominent feature of the therapeutic action of the solution. In the author's opinion, these results are due to accelerated drainage of the upper urinary tract induced by the solution.

CONGENITAL ANOMALY OF OMENTUM CAUSING TORSION: REPORT OF A CASE.

G. G. O'Brien, Chicago (Journal A. M. A., March 3, 1934), reports a case of congenital anomaly of the omentum that caused torsion in which blood-stained fluid was encountered when the peritoneal cavity was opened. This is at variance with Black's case, in which there was an absence of blood-stained fluid, but like that of Cowell, who stated that a rush of blood-stained fluid when the abdomen is opened should remind one of the possibility of torsion of the omentum. In Black's case, however, there was marked distention of the colon, a form of reflex ileus due to irritation of the splanchnic nerves involved in the torsion. The congenital anomaly, a tongue-shaped process, which was separate from the omentum, was probably the etiologic factor in the torsion. Bierman and Jones described two cases with an accessory omentum. Although torsion was not present in either of their cases, the accessory omentum has been suggested as an etiologic factor by many authors.

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Tablets Calcium Phosphate Compound with Vios-terol—10 D Squibb are indicated for the wide variety of conditions which may be benefited by calcium administration. The tablets are flavored with winter-green and when chewed have a pleasant taste. They are marketed in bottles of 50 tablets.

FAMILIAL NEUROTROPHIC OSSEOUS ATROPHY: FAMILIAL NEUROTROPHIC CONDITION OF THE FEET WITH ANESTHESIA AND LOSS OF BONE.

E. Maurice Smith, Mount Vernon, Ill. (Journal A. M. A., Feb. 24, 1934), observed an unusual clinical condition (a familial neurotrophic condition of the feet with anesthesia and loss of bone), which has not permitted definite classification, in two generations of a family, and there is definite history of the same disease in an earlier generation, making three generations in which the condition has appeared. Microscopic examination of nasal smears and biopsy material from the lesions on the feet has been negative for acid-fast bacilli. The Wassermann reaction is negative in all cases excepting one. Many diagnoses have been suggested and considered, none of which seem satisfactory. Syphilis, tuberculosis and syringomyelia are readily eliminated on clinical grounds. Leprosy has been given serious consideration but is to be excluded on account of the absence of manifestations elsewhere than on the feet and the uniformity of the type of manifestations in all members of the group. The patients were seen by a consultant with a large experience in leprosy, who ruled out that condition. However, he stated that any one of the cases considered alone would justify a strong suspicion of leprosy.

ABRUPTIO PLACENTAE FOLLOWING ACUTE PLACENTAL INFARCT: CESAREAN SECTION; STAPHYLOCOCCUS AUREUS SEPTICEMIA; RECOVERY FOLLOWING TRANSFUSION FROM IMMUNE DONORS.

R. A. Bartholomew, Atlanta, Ga. (Journal A. M. A., March 3, 1934), presents a case of abruptio placentae following acute placental infarct that supports the theory that abruptio placentae is the result of poisonous split products of placental protein, particularly histamine, elaborated during the autolysis of an acute infarct on the maternal surface of the placenta. It illustrates the conditions warranting the use of cesarean section rather than slower conservative measures in the treatment of abruptio placentae. It shows the ever present possibility of infection following cesarean section, even in a clean case. It illustrates the apparently life-saving value of blood transfusions, particularly from donors immunized against the specific organism by vaccine treatment.

THE JOURNAL

OF THE

OKLAHOMA STATE MEDICAL ASSOCIATION

VOLUME XXVII

MCALISTER, OKLAHOMA, MAY, 1934.

NUMBER 5

PNEUMONIA—DIFFERENTIAL TYPING AND TREATMENT*

E. H. SHULLER, M.D.
MCALISTER

Pneumonia is an acute infectious disease characterized by an inflammatory reaction in the lungs and is commonly differentiated both anatomically and clinically into lobar and broncho-pneumonia.

The management of this disease has always been a great problem. With the passing of time there has been some improvement in the management but science has never been able to conquer it. There is still a very large number of people who lose their lives every year as a result of it.

Although the diagnosis of pneumonia is made with certainty, only after examination of the lungs has revealed the physical signs characteristic of the disease, certain factors of the history are sufficiently distinctive to be of great value in suggesting the probability that pneumonia is present. The two most important aspects of the history bearing on diagnosis are the nature and severity of the predisposing causes and the character of the onset. The predisposing causes may be classified into two groups, namely, the acute infectious accompanied by inflammation of the upper respiratory tract, such as colds, influenza, measles, whooping cough, etc., and second, anesthesia, acute alcoholism, injury, post-diphtheritic paralysis, etc.

The predisposing causes listed may be accompanied by any of the various bacterial or anatomical types of pneumonia, but there is usually a fairly definite relationship between the predisposing cause and the type of pneumonia which usually develops. Therefore, the clinical differentiation between the anatomical types is based on the nature of the predisposing causes, the character of the patient's symptoms, and the nature of the physical

signs found by examination. Another factor which is becoming more important in the treatment of pneumonia is the determination of the causative organism. One group of organisms is ordinarily associated with lobar pneumonia and another with broncho-pneumonia, and the differential etiological diagnosis may be suggested by the characteristics of the predisposing factors, the physical signs, the X-ray, etc., but it can be definitely established only by bacteriological methods.

Very rapid progress has been made during the past few decades in the control of certain diseases, not only by prophylaxis but by treatment of the disease itself. This has been accomplished to a large extent by the development of specific serums. As in many other diseases, the specific organisms causing pneumonia have been isolated and specific serums have been produced. Because of the varied number of organisms causing pneumonia, and because horses respond to the different types of pneumococci differently, it has been impossible to produce a serum which will act specifically in all cases of pneumonia. It has been necessary to devise some means by which the organism can be isolated and typed in each individual case before the specific serum can be given with any hope for a favorable percentage of results. Until recently the method of typing has been a very complicated procedure, in that it required considerable time and a highly trained technician, and only a small per cent of the profession had access to laboratory facilities necessary for the typing. Therefore, the specific serum therapy has not been very practical for the whole profession,

Pneumonia has long been divided into four groups, namely, groups I, II, III and IV. These types were determined from pure cultures of the organisms by a process of agglutination with immune sera of

*Read before the meeting of the Oklahoma State Medical Association, Oklahoma City, May 16th, 1933.

types I, II and III. Group IV was named because certain of the encapsulated gram positive organisms did not agglutinate with any of the three sera. By this method of classification the incidence in which these cases occur as reported by certain authors is as follows: Voilhenberg, type I, 33.75 per cent; type II, 12.5 per cent; type III, 15 per cent; type IV, 38.75 per cent. Cecil, in 2000 cases, reported type I, 33.6 per cent; type II, 19.1 per cent; type III, 13.3 per cent; type IV, 33.1 per cent. Cole, in 700 cases, reported type I, 35 per cent; type II, 30 per cent; type III, 10 per cent; type IV, 25 per cent. Such factors as seasons, climate, age, local conditions, etc., enter into the variation of percentage by various authors. It is very evident that this method of grouping is incomplete since group IV is made to include all organisms which do not agglutinate with the sera of the first three groups.

A very enlightening article was published by Bullowa in the New York State Journal of Medicine of January 1, 1933, in which, with the aid of Georgia Cooper, of the Research Laboratory of the Public Health Department of New York, he presents an extensive study of the various types of the pneumococcus. As a result of their study they have isolated thirty-two types or organisms among 253 cases. By a more delicate method of typing new groups were divided from the old groups. For instance, group V was separated from group II, and group VIII was separated from group III. Most of the new groups were formed from group IV. This has also been presented by Park, Cooper, Edwards and Rosenstin. Bullowa has been unable to isolate these organisms and has succeeded in producing useful sera in fourteen types of organisms other than types I and III. He has gotten equally as good results from serum treatment of types VII and VIII as he obtained by serum treatment of type I. Sera for both of these groups can be obtained commercially.

This evidently is the reason why a specific serum has never been produced for group IV, and why the sera for groups II and III have not been as satisfactory as for group I. This makes complete typing and serum therapy of pneumonia even more complicated and difficult for the

man who does not have access to a well equipped and modern laboratory. However, it is a step towards developing more specific sera and by developing a satisfactory method of typing which may be used generally, a larger number of cases of pneumonia may be treated with specific serum thus lowering the death rate due to this disease.

By checking the literature it is found that reports of large numbers of cases show that from forty to fifty per cent of all cases of pneumonia are type I and type II. It has been proven that in cases diagnosed early and accurately typed as types I and type II, very marked results are obtained by specific therapy. Bullowa reports a reduction in the death rate of approximately fifty per cent in 309 cases of group I cases taken on admission as compared with a similar number untreated. There was also a distinct reduction in the type II cases. Cecil reports a reduction of death rate from 30 per cent to 20 per cent in unselected cases of group I, and a further reduction to 11.7 per cent in cases treated under 72 hours. He further states that administration of serum to type II patients is followed in many cases by a disappearance of the organism from the blood stream and a general improvement of the patient. In still another article he reports that in a series of 252 unselected type II cases the death rate was 40.5 per cent in cases treated with serum, as compared with 45.8 per cent in the same number of untreated cases; also in a small series of early cases showed a death rate of 14.3 per cent, as compared with 65 per cent in a like number of controls. This series, however, was not large enough to be convincing, similar reports are made by other authors.

Such reports prove conclusively that serum therapy is effective, and since types I and II are the dominant types and are particularly amenable to treatment, serum therapy should certainly be practical if a practical method of typing is at hand.

Methods of typing have been developed so that anyone who is trained to read microscopic Widal and Kahn tests can type the pneumococcus with considerable accuracy and within a very short time.

In 1918 Krumwiede developed a method of typing the pneumococcus which surely is the most rapid method of typing. It is performed as follows: A centrifuge tube is filled with 5 to 10 cc. of

sputum and placed in boiling water for several minutes until a firm coagulum results. The latter is broken up with a pipette and, when necessary, one cc. of physiological saline is added to make 1 cc. of fluid. The tube is again shaken several times during the heating. The tube is centrifuged at high speed and .3 cc. of the supernatant fluid is layered over an equal amount of each undiluted type pneumococcus serum. If a ring of precipitate forms at the junction of the two fluids, the organism causing the infection is of the corresponding type. If no reaction occurs, plug the tube loosely without shaking and incubate at 45° C. Observe at the end of five minutes and again at the end of fifteen minutes. Then shake the tube gently and reincubate for no more than one hour. A positive reaction in this tube is detected by a definite clouding of the antigen-antibody mixture. A positive reaction by this method is conclusive proof of the type, and specific serum therapy can be instituted. This test requires from thirty minutes to one and one-half hours.

If a negative or questionable reaction is obtained, it should then be checked by the Sabin method. This is done by washing and emulsifying a small portion of sputum in physiological salt solution. From 0.1 cc. to 1.0 cc. of saline mixture is then injected into the peritoneal cavity of a mouse. Three or four hours later a small portion of the peritoneal fluid is obtained by capillary puncture. A glass slide is marked off into equal parts and a minute drop of the peritoneal fluid is placed in each portion. The first is mixed with a saline and is used as a control, the others are mixed with a loopful of a 1-10 dilution of each type of anti-pneumococcic serum. These are thoroughly mixed and allowed to dry. They are then stained for one-half minute with a basic fuchsin stain. These smears are then examined by oil emersion lense. If a specific agglutination reaction occurs with the diagnostic serum, the organism is of the corresponding type. This test ordinarily requires from four to five hours.

If neither the Krumwiede nor the Sabin method gives a positive reaction, the original mouse method of tube agglutination and precipitation can be performed in full. This method is generally accepted as an accurate method of typing, but it requires several hours for completion. It is a less practical method for the general technician to perform, and time prohibits a full discussion of it.

In comparing the two given methods with the mouse method, we find them a little less accurate, but the percentage of error is small enough that they are practical. Kahn, in an article in the *Journal of the American Medical Association*, 1925, refers to a series by Krumwiede in which twenty-five cases were tested. There was agglutination in nineteen cases by the mouse method, and fifteen cases, or 79 per cent, by Krumwiede's method. He also reports a series of twenty-one cases of which eight were group IV. Of the remaining thirteen, eleven, or 84.6 per cent, were correctly typed by the direct method and checked by the mouse method. Sabin reports over a hundred cases checked by his method, against the older method, with almost perfect results. This is further brought out by later work, and Cecil, Park, Felton and others, who report similar comparisons.

It is not necessary to say more about the advisability of using specific serums in this condition. It is very evident that marked benefit is obtained from it and, as in all other conditions where specific sera are used, the time element is a big factor. Due to the rapidity with which those tests can be made, the relatively high percentage of accuracy, and the simplicity of their technique, it is to be hoped that more effort will be made on the part of the physician to give the pneumonia patient the benefit of accurate specific serum therapy whenever possible.

As in the treatment of any other disease by specific therapy, the cost of the serum is a big factor, and in a large number of cases is prohibitive. It is to be hoped that the serum can be produced for a price which will make it more easily obtainable. With this, and with the development of the practical methods of typing of the pneumococcus, much can be done towards lowering the death rate of this dreaded disease.

NON-SPECIFIC PROTEIN THERAPY.

CHAS. H. HARALSON, M.D.
TULSA.

Clinicians observed that disease was affected favorably by intercurrent infections. This observation led to the use of various vaccines, autogenous and stock. These were found wanting; they produced such variable results that the consensus of opinion was that there was very little to be gained by their use.

Tetanus antitoxin came into general use. Observers noted that the incidence of ophthalmic complications was very materially reduced; this resulted in the use of diphtheria antitoxin and typhoid vaccines, endeavoring to produce a reaction, evidenced by a rise in temperature and leukocyte count.

Favorable results have been reported by a large number of ophthalmologists on numerous eye diseases using varied agents to create the reaction. The antiserum of diphtheria, typhoid-paratyphoid vaccines, and the inoculation with malaria are outstanding.

The varied agents used caused investigators to experiment with other agents. Out of these experiments has developed a group of symptoms that are known as foreign protein shock, elevation of temperature, leukocytosis, the mononuclear cells predominating, malaise and pain in varied parts of the body, the intensity of these symptoms being governed by the quantity and type of the agent.

Peterson has shown that foreign protein shock sets free a number of tissue ferments which break up bacteria and render their toxins less toxic. There is an increase in cell permeability allowing antibodies to penetrate the cells from the blood stream, thereby increasing the body's defensive mechanism to the maximum. Von Szily demonstrated that foreign protein injections produced an active inflammatory process in the ocular structures, the uvula tract, showing an active hyperemia and infiltration with lymphocytes.

Non-specific protein therapy is divided into two classes: First, prepared proteins, which produce a reaction without causing a rise of temperature. Of these, omnadin, aolin and lactigen are better standardized and more commonly used. The second class produces an elevation of tem-

perature, as well as stimulating the other protective forces of the body. Whole milk is the most effective and accessible. Autoserum will produce very satisfactory results. Five to ten cc. of blood removed from a patient's vein and immediately re-injected intramuscularly, the reaction is usually not so great and the results are claimed by some clinicians to be superior to other forms of foreign protein agents. Friund claims that the reaction of this type of injection is due to split products in the blood, which, when reinjected, act as mild toxins, producing the same reaction in the eye as that demonstrated by Von Szily, which results from the injection of any foreign protein. Typhoid-paratyphoid vaccine, injected into the vein, gives us a standard agent with which we can produce a definite reaction of almost the desired degree, therefore it is of value in sympathetic ophthalmia and retro-bulbar neuritis.

Non-specific protein therapy has been used extensively with varied reports of its efficacy, but so far as I know, no serious objections have been raised against its use, therefore it can be considered a possible aid in combating disease. This form of treatment, when used as an adjunct to other procedures, has seemed to be of value. Its application and use, in the varied eye diseases, has been described by many observers. From such reports I have endeavored to utilize it, and believe it has been of value in a large per cent of cases treated.

The use of non-specific protein therapy in eye disease is varied and should be adapted to the individual case. Its routine use will be disappointing and is an unnecessary procedure.

This form of therapy is of value in the focal infection group of eye diseases. It should not be used until all foci of infection have been removed and the local condition has been treated by routine measures, both local and systemic. When routine treatment fails to give the desired results, the administration of a non-specific protein will increase the body resistance and will materially affect the progress of the disease, making it possible to effect a cure, and decreasing the loss of vision. Iritis, uveitis and ulcerative keratitis are distinctly benefited, the symptoms are less severe and their course is materially shortened, thereby limiting their complications and sequela to a min-

inum. Exudative retinitis and choroiditis, as well as vitreous opacities seem to show distinct improvement when given this form of therapy.

This type of disease responds to the non-fever producing group of proteins, of which I prefer to use omnadin or aolin. These produce no symptoms, and there are no contra-indications to their use. Omnadin can be given 2 cc. intra-muscularly each day for an indefinite period of time. Aolin produces more local reaction, but is equally as efficacious when given in 4 cc. intra-muscular injections on alternate days. Whole blood in 3 cc. doses seems to give approximately the same results, and I have not seen any objections to its use in the fifteen cases treated. An average of eight injections were given on alternate days. Larger doses create too much local reaction and do not seem to be more effective in this type of disease.

The most spectacular results are obtained in gonorrheal ophthalmia. The use of whole milk has removed most of the danger from this dreaded disease. When seen early, or within thirty hours of its onset, the results are far superior to any other type of treatment. The whole milk is boiled for four minutes. As soon as it is cooled, 10 cc. are injected in the gluteal region. It should be repeated every other day until four injections have been given. The reactions are usually very severe and cause the patient considerable pain. The first twelve hours following the injection the pain can be controlled with ten grains of aspirin every four hours. I have never had sufficient nerve to discontinue local treatment of the infected eye, but I believe that the reaction from the milk injection should have the credit for the cure effected. Before using milk most of my cases developed a corneal ulcer, and very few of them retained any vision of value. Since I have been using whole milk, by this method I have treated nine cases with no ulceration of the cornea or loss of vision.

Ophthalmia neonitorium, when seen before there is breaking down of the cornea, does not, in my opinion, require milk injections. However, some clinicians state that the doctor who does not use it would be liable to, and should be, criminally prosecuted. In giving it to an infant it should be given in 2 cc. doses every other day for four doses. Whole milk protein shock is valuable in post cataract extraction.

When the eye is inflamed and painful, it seems to give very good results. I have used it in two cases of pan-ophthalmitis following perforating injuries. In both cases the pain and swelling were very much decreased, and the period of hospitalization was reduced about fifty per cent. If the results in pan-ophthalmitis are what they seem to be, the early use of this form of therapy in infections, following eye surgery, should save many eyes that would otherwise be lost.

My experience with typhoid-paratyphoid vaccines has been limited to three cases—two cases of retrobulbar neuritis, and one, pneumococic ulcer of the cornea. The vaccine was given intravenously. The reaction was quite definite and seemed to be of distinct value. The dose administered in each case was 25,000,000 for the first and increasing the amount at each subsequent injection sufficiently to produce an elevation of temperature of at least two and one-half degrees. Most cases require approximately a 15,000,000 increase at each dose. The vaccine should be repeated as the temperature returns to normal. These cases must be kept in bed and on a very restricted diet, keeping in mind the patient's general condition and continuing the treatment as long as there seems to be a favorable reaction in diseased area.

In conclusion, non-specific protein therapy raises body resistance and produces a definite reaction in the eye.

This type of therapy seems to be of value in focal eye disease.

The action of all substances enumerated is essentially the same.

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THE PRESENT STATUS OF THE VITAMINS.*

DAVID J. UNDERWOOD, M.D.
TULSA

The discovery of vitamins and their importance to mankind is a subject that has not been universally recognized and accepted by the medical profession in general, and this is not surprising in view of the fact that it has only been a few years since vitamins were first discovered, and much of the experimental and research work demonstrating the importance of these vital substances has been carried on in the laboratories in recent years. Then, when we realize that vitamins are something that nobody has ever seen, no microscope ever revealed, and that may never be seen or revealed, it is not surprising to find a great many members of the medical profession who are rather hesitant in accepting this recently acquired knowledge.

If it is true that some of the diseases of infancy and childhood, as well as adult individuals, owe their origin to vitamin deficiency; if it is true that normal physical growth and development in early life is influenced by vitamin activity; if it is true that anorexia in the weak anemic and mal-nourished child is improved and a steady gain in weight follows administration of a rich vitamin diet; and if it is true that human constitutions show a difference in their vitamin requirement and in their vitamin reserve, then, surely, every physician should be interested in vitaminology and its progress.

The history of the discovery and development of vitamins is as fascinating as any romance. Until the Russo-Japanese war, everyone thought Beri-Beri was a disease caused by some undiscovered bacillus. For centuries this "Scourge of the East" was prevalent in Japan, China, and the Pacific Isles. All that was known concerning this disease was that it was most common among the poor, who lived on rice and fish, and the death rate increased markedly after floods or droughts had destroyed the vegetable crops. The disease swept thru the army and navy of Japan and Russia, threatening annihilation, and the authorities were panic-stricken in their search for a preventive. Finally, someone recalled how Eijkman, a Dutch scientist, in 1897 discovered, accidentally, that pigeons, fed upon polished rice, developed

an illness resembling Beri-Beri, and that this condition could be cured by feeding the whole grain. So the order was given to serve whole, instead of polished, rice to the soldiers, and Beri-Beri promptly disappeared. Thus we see it was thru the outer covering of the rice grains, which science calls the pericarp, that vitamins became known. It would be extremely interesting to trace thru animal experimentation the development of this newer knowledge, and show how science has proven its theories about the vitamins, especially since so much of it has been done in this country, but it is a long story, and time will not permit.

There is no longer any ground for doubt concerning the place and importance of vitamins in matters of health, growth, and physical development. This subject has stood the test of twenty swift-moving years of actual experimentation, and in this time much information has been obtained concerning the nature and importance of vitamins, until today the vitamin situation is no longer considered just a theory, but is recognized by the leading research men, and the outstanding men in the field of nutrition, as one of the real discoveries of modern scientific medicine.

Prior to the beginning of the present century, the nutritional needs were expressed in terms of the now known food elements without any regard to the vitamin content of these foods. It was universally agreed that the maintenance of life, and the proper growth and development, depended primarily on the proper proportion in the diet of fats, carbohydrates, proteins, mineral salts and water. Scientists believed they had ascertained what each of these contributed to the needs of the body, and that by giving the proper proportions of each a perfect nutritional state could be attained. The only thing wrong with this theory was that it wouldn't work. Nutritional disease didn't diminish under this regime, and the most carefully balanced diets failed to produce the desired results. Men, women and children still ate and starved. Why? Merely because the so-called well-balanced diets did not include the all-important vital substances now known as vitamins.

While it was generally recognized at that time that there were certain well known diseases, such as scurvy, rickets, pellagra and Beri-Beri, that were due to a dietary deficiency and could be cured by

a proper change in the diet, definite knowledge as to the real cause of these diseases was lacking and not considered of real fundamental importance. It is in the laboratory in the last twenty years, thru animal experimentation, that the causes of these diseases have been proven to be due to a vitamin deficiency. These diseases have been produced in the experimental animal by the giving of a diet deficient in the necessary vitamin, and then the condition has been cured by the simple addition of that vitamin to the animal's diet.

A healthy, normal individual has quite a high vitamin reserve, this being a typical example of the way in which nature has provided for the "factor of safety," so that in an emergency in which the body is not getting sufficient vitamins from the food intake, nature falls back on this vitamin reserve to supply the vitamins during this period, and if this deficiency period extends over a long enough time the vitamin reserve will be exhausted, and then the patient will begin to show clinical evidences of one of the deficiency diseases.

A new-born babe is possessed with a vitamin reserve in case the mother has had a diet rich in vitamins during the gestation period. So, consequently, we do not commonly see evidences of a deficiency disease in the first few weeks of the baby's existence, since, regardless of whether or not the baby's diet contains an ample amount of vitamins, it requires some time to use up the reserve the ordinary baby acquired from its mother.

There are six definitely known vitamins.

Vitamin A, otherwise known as fat soluble A, the anti-ophthalmic and the anti-infective vitamin, was originally thought to be the growth-promoting vitamin, since without it, and with an otherwise adequate diet, experimental animals failed to grow normally. A deficient supply of this vitamin leads to weakening of the body tissues, and increased susceptibility to bacterial infection, particularly of the epithelial tissue. The most conspicuous is the condition of the eye, known as xerophthalmia. During the war there were serious outbreaks of this disease among the children in certain districts of Denmark. These people were exporting every possible pound of butter to the warring nations, and the children were receiving

skimmed milk instead of whole milk. When sufficient butter fat and whole milk was given to these children, cures were effected, providing the disease had not advanced too far.

Not only may the eyes be diseased, but further investigations show that a lack of this vitamin may result in pus infections of the nasal sinuses, ears, mastoid, lungs, bladder and skin. The lack of the vitamin does not cause these infections, but so reduces the resistance of the body that the germs gain a ready entrance and do their harmful work.

This vitamin is so widely distributed in our common foods, and apparently so little is needed, that the grosser manifestations of its absence are seldom seen in this country. Human xerophthalmia is a very rare condition in this country, although in Japan over 1400 cases were reported in two years' time. This vitamin is found in great abundance in cod liver oil, other fish oils, butter fats, therefore in milk, cream and butter, egg yolk, vegetables, liver and kidneys.

Vitamin B, formerly known as the water soluble B, or growth-promoting vitamin, is now known as the vitamin B complex. Now it is believed that this vitamin B complex is made up of at least two independent vitamins.

One of these, known as B-1, or vitamin F, is the anti-neuritic vitamin, and is fairly easily destroyed by heat. The other, B-2, or vitamin G, is more stable to heat and differs from it markedly in its physiological action. This vitamin B complex is essential for the maintenance of normal appetite, growth, and especially lactation and proper functioning of the digestive tract. And its absence from the diet results in a short time in the loss of appetite, rapid loss of weight, and death. The rapidity with which symptoms of vitamin B deficiency becomes apparent indicates that the body has only a limited capacity for storing this vitamin. Therefore the diet should contain an abundance of this vitamin at all times.

The B-1 vitamin, or the anti-neuritic vitamin, is essential for the prevention of polyneuritis in experimental animals, and possibly Beri-Beri in man. In no place in medicine are the results more spectacular than when the vitamin B extract is given to a far-advanced case of Beri-Beri. Babies, who were seemingly doomed to die, with general paralysis, struggling for

breath, and with markedly dilated hearts, improve visibly from hour to hour, and within a few hours are out of all danger, by the hourly oral administration of this vitamin. As a result of the discovery of the cause and treatment of this condition, the mortality in the Philippines has been reduced from 49 to 18 per cent, a 31 per cent decrease.

The B-2 vitamin, sometimes called the anti-pellagra vitamin, is so closely associated with the anti-neuritic vitamin that for many years its independent existence escaped observation. A deficiency of this vitamin in the diet of rats is followed by a retardation in growth, a loss of appetite, and a loss in weight. These rats become weak, drowsy, and lethargic, instead of becoming nervous and irritable, as in the case of a vitamin B-1 deficiency.

On account of these rats developing pellagrous symptoms and lesions, and the fact that substances relatively rich in this vitamin are effective in the prevention and cure of pellagra, many investigators are of the opinion that pellagra is a deficiency disease caused by the lack of this vitamin B-2.

Spectacular results can be obtained by feeding these pellagra patients liver, liver extract, brewers' yeast, or any substance containing large amounts of this vitamin. These patients can be clinically cured and remain perfectly well as long as these foods containing sufficient amount of B-2 are included in the patient's diet. Vitamin B complex is widely distributed in ample amounts in our common articles of diet, being found in the leafy vegetables, eggs, milk, and whole grains, such as wheat, oats, barley, rye and rice; and in liver, kidneys and brewers' yeast.

Vitamin C, or the anti-scorbutic vitamin, has received much attention in this country, and its absence or deficiency is the direct cause of scurvy. In the earlier times scurvy was very common among the sailors, soldiers and prisoners, since they were subjected to simple, monotonous diets, consisting of dry cooked or stale foods. But today human scurvy is almost unknown beyond the period of infancy, and it rarely occurs in the breast-fed infant, and when it does one can safely assume the mother's diet has been very deficient in vitamin C-containing foods. We must always be on the lookout for the sub-acute cases of scurvy, which probably

result from a relative insufficiency of this vitamin. These children are very irritable and restless, do not grow normally, lack stamina, have faulty dental development, and have a very much lessened resistance to all infectious diseases. Orange juice works wonders in these cases, and of course should be universally given to all babies.

Vitamin C is the most unstable of all known vitamins, being readily destroyed by heating in neutral or alkaline solutions, by ageing, oxidation, and the drying of foods containing it. Vitamin C resists cooking and canning processes, particularly if air is excluded. Therefore, properly canned fruits, vegetables and tomato juice contain practically as much of the vitamin as the fresh products. Experimental work has shown that the longer time and higher temperature used in commercial canning where the cooking is done in closed containers which exclude the air, results in less destruction of the vitamin than ordinary home cooking methods.

As the capacity of the body to store vitamin C is very limited and as there is an individual factor in the susceptibility to scurvy, would make it an almost positive indication that all babies, both artificial and breast-fed, should be protected by orange juice after the first month of life.

Vitamin C occurs most abundantly in all citrus fruits, oranges, lemons, grapefruit and in tomatoes, cabbage, spinach, milk and liver.

Vitamin D, or the anti-rachitic vitamin, has the property of promoting the assimilation of calcium and phosphorus, and as rickets is primarily due to a deficiency or wrong proportion of these substances, the role of vitamin D in rickets is to enable the body to use effectively its supply of these elements resulting in the formation of good bones and teeth. The intake of calcium and phosphorus may be ample in the infant's diet, and yet the infant is unable to absorb and assimilate these elements if there is a vitamin D deficiency, thus resulting in the bone pathology that occurs in rickets.

When one realizes that from forty to eighty-five per cent of the American children, at some time in infancy or childhood, are victims in some degree of severity of this serious disease, the discovery

of vitamin D, and its relationship to rickets, marks a new era in human nutrition and in preventive medicine.

Vitamin D is found chiefly in cod liver oil, egg yolk, whole milk and in the green vegetables, especially spinach. Vitamin D occupies the unique position among the vitamins of being the only one that can be synthesized or manufactured from a definite chemical compound. Numerous commercial preparations are now on the market, none of which can be a satisfactory substitute for cod liver oil. When the human skin is exposed to the sun's ray, or the ultra-violet ray, the cholesterol in the skin is affected by the ray and is believed to result in the formation of vitamin D.

Vitamin E, or the anti-sterility vitamin, is essential for reproduction. All the experiments conducted so far have been upon laboratory animals, sterility produced by a restricted diet devoid of vitamin E, and this condition cured by adding vitamin E-containing foods to the diet. In the absence of vitamin E ovulation takes place, but there is a failure of placental function, with death and resorption of the fetus.

This vitamin is found most abundantly in the wheat embryo, but occurs in whole wheat, rolled oats, lettuce, lean meat and to a lesser extent in milk. It is, however, so widely distributed in nature, and apparently so little is needed, that its lack is seldom felt under ordinary nutritional conditions.

Ever since the discovery of vitamins scientists and dietitians have noted a loss of appetite associated with all the cases in which there was any marked degree of vitamin deficiency, and it has been clearly demonstrated in recent years by numerous investigators that these invisible protective substances actually are important factors in the producing of a real appetite.

Animals fed upon a diet deficient in vitamins invariably suffer a loss of appetite, often times to the point of absolute refusal of food, and yet as soon as a high vitamin content is added to the daily allowance of food, the appetite begins to return, soon becomes normal and remains as long as the vitamins are given in sufficient quantity.

A federal children's bureau of the Department of Labor recently stated that 5,

000,000 American children, rich and poor, are suffering from mal-nutrition and loss of appetite, not so much from under feeding, as is commonly thought, but of wrong feeding. Of these 5,000,000 boys and girls probably 4,000,000 could be saved from this curse without one cent more being spent on them than is now spent. Health and good nutrition in 95 per cent of these cases is not a question of climate or medicine prescribed by the doctor, but of careful supervision by a trained physician who is capable of advising the right type of pure food, which contains a sufficient amount of vitamins to meet the requirements of a growing, constantly energy-consuming child.

Much can be accomplished in all these mal-nourished children if a diet with sufficient vitamins is prescribed for the child, and the writer has yet to see the first case in which the giving of a diet rich in vitamins has failed to show an improvement in the appetite and a gain in weight in the mal-nourished child. This recently-acquired knowledge is something that can't be emphasized too much in the face of conditions existing at the present time, and the generalized practical application of this will go a long way in preventing and eliminating the thin anemic and undernourished child from our children of tomorrow.

In conclusion, the amount of the different vitamins necessary to afford ample protection in the human is a little uncertain, but apparently is rather small, and the individual factor may have more importance than we now think. It is not necessary to bar any of the foods from the diet, such as the milled flours, polished rice, meat, potatoes, and canned goods, or any of the highly refined foods, as was formerly thought, but the secret of success in nutrition lies in eating more of the protective foods, such as milk, fresh fruits and the leafy vegetables, and as long as these are included in abundance we may then satisfy our appetites with these so-called incomplete foods and suffer no ill-effects. This system of diet, which is a rather simple one and involves no great self-denial on the part of the patient, will go a long way towards improving the physical condition of our

youth, and eliminating these so-called deficiency diseases.

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ADENOMATOSIS COLI AND CARCINOMA OF THE COLON: REPORT OF CASE ILLUSTRATING MULTICENTRIC MALIGNANCY

Joseph Felsen and Joseph J. Wells, New York (*Journal A. M. A.*, March 3, 1934), point out certain pertinent observations to the development of multiple primary malignant tumors of the large intestine on the basis of adenomatous polyps. They make no attempt to dispute the validity of Billroth's strict criteria with regard to multiple primary malignant tumors. It appears to be quite generally conceded that the simultaneous and independent development of carcinomas from two or more adenomatous polyps of the colon or rectum does occur. The case that they cite is particularly instructive in that a benign adenomatous polyp and two stages in the development of a malignant growth from such a polyp are clearly shown. Accumulated data point to an underlying tendency to neoplasia in adenomatosis coli. Because of the high incidence of malignant degeneration in adenomatous polyps, their removal at an early stage is important. When removal is impossible because of their number, careful periodic examinations by means of the contrast enema and sigmoidoscope are indicated. When malignant conditions supervene, local resection results in a high proportion of cures.

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OUTBREAK OF AMEBIASIS IN CHICAGO DURING 1933: SEQUENCE OF EVENTS

Because of the many conflicting statements regarding the recent outbreak of amebiasis in Chicago, Herman N. Bundesen, Fred O. Tonney and I. D. Rawlings, Chicago (*Journal A. M. A.*, Feb. 3, 1934), take this occasion to cite briefly the sequence of events as they occurred, beginning with the report to the board of health on August 16 of two cases of amebic dysentery that were observed in two different hospitals of the city and ending with the investigation of the physical plant of one of the hotels on January 3, at which time the chief engineer of the hotel revealed that on July 2 two sewer pipes had broken under the ice storage room, permitting sewage to flood areas where food and ice were stored, prepared and handled, and also where 345 food handlers worked, many of whom ate their meals in the basement in the quarters which were flooded. Realizing the peculiar circumstances concerned in this outbreak and the widespread interest of public health officers, the board of health is endeavoring to prepare a complete and detailed report of all phases of the epidemic which will, when ready, be made generally available.

RELIEF OF PROSTATIC HYPERTROPHY AND BLADDER NECK RESECTION BY THE TRANS-URETHRAL METHOD.

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Prostatic resection is the removal, by instruments passed through the urethra, of the obstructing portion of the prostate gland. This is carried out either by the improved cautery punch method, or by electrically controlled loops, which remove obstructing tissue under direct vision, and without resorting to the open operation.

Man has been a sufferer from prostatic enlargement since the dawn of history, and various methods for relief have been used down through the years. The tragedy of man is, that he so often reaches the prostatic hypertrophic age when he is in the most active and useful stage of his life; the time when he is in a position to instruct, devise, and impart the knowledge which he has accumulated. But when this obstruction, with its attendant pain, retention, absorption, and discomfort begins, he loses his vigor, his grip, his mental force, with a general letting down, and many useful years destroyed.

Until within the last few years, it was considered that prostatic hypertrophy could only be relieved by the open operation, such as the suprapubic or perineal prostatectomy. Also, until a fairly recent date the removal of the prostate was considered one of the most difficult and dangerous operations in the field of surgery.

Within the last twenty-five years many ingenious instruments, used directly or indirectly with the cystoscope, have been devised, by which the intra-urethral and intra-vesicle, prostatic enlargement or obstruction can be visualized, diagnosed, successfully removed.

Dr. Hugh Young, back in 1909, developed what is known as his punch instrument, which, so it is claimed, was fairly successful in certain types of obstruction, but not generally used on account of the likelihood of hemorrhage and infection.

Dr. John Caulk, in 1920, developed a cautery punch for cautery resection of prostatic obstruction. He believes that a large portion of the obstructions are inflammatory hyperplasias, and not neo-

plasms. Therefore, it is not necessary to remove the gland completely, but remove the obstructing portion, followed by a certain amount of shrinkage.

Stern, in 1926, introduced his ingenious instrument which he called the "resectoscope," but for some cause he did not continue his research work to a successful or practical conclusion. Shortly thereafter, though, Dr. T. M. Davis of Greenville, South Carolina, became interested and began using this instrument, but added numerous improvements, such as: A larger fenestra, cutting loop, improvements in the vision and lighting systems. He also added a coagulation current for the control of hemorrhage. So, to Dr. Davis, credit must be given for the advancement and information obtained in the transurethral method of treating the prostate and neck obstructions.

Credit is due, also, Dr. J. F. McCarthy for devising his ingenious visualizing instruments. At this time his instrument called the "resectotome," is fairly universally used.

There is no subject before the medical world today causing as much comment as the discussion of the relative merit of instrumental prostatectomy and other forms of vesicle neck obstruction. At this time there has been a sufficiently large number of cases reported and observed over a period of time, to permit one to make an estimate as to the relative merits of this method, as compared to the open operation. So, with the light of this information before me, I feel that at least 95 per cent of prostatic obstructions can be removed by the transurethral or instrumental method.

The question might be raised, "Will prostatectomy become obsolete, since the advent of the transurethral method?" I say "No," as there is no method that is one hundred per cent perfect. Then, too, there might be complications that would end in more difficulty, which might require either suprapubic or the perineal operative measures, but the percentage of use of the older method will be small, I think not over five per cent.

The most important factor of this method is, that it offers relief with very little attendant danger in the early stages of prostatism, especially to the younger man who would rather endure years of suffering than to undergo the old method of prostatic enucleation.

We should try to educate all men of prostatic age to seek early urological aid before serious pathological changes result. At the early age of prostatism, the time when the obstruction is small, the residual urine is slight, and there are no complications, resection of the prostate is attended with little danger.

My personal experience with transurethral resection dates back to 1922, at which time I began to use Caulk's cautery punch method for the removal of certain types of vesicle neck obstructions, but only in selected cases, such as the bar, the sclerotic middle lobe or the contracture. However, as I became more skilled, I gradually increased its use, so about the time of the advent of the resectoscope and resectotome, I was using it in about half of my prostatic cases.

Since acquiring the Davis-Bovie surgical unit, and the McCarthy's resectotome, I have used this method with increasing satisfaction. However, in some cases I find that better results are obtained from the use of the cautery punch, which has been improved by the addition of the vision and lighting system, enabling one to remove the obstruction with a direct view. For the successful treatment of all prostatic obstructions it is necessary to have as a part of one's equipment, both the cautery punch and the resectotome.

I find that the resectoscopic method is not without danger, and I want to stress a few which I encountered. One must be very cautious in its use, and have thorough knowledge of the anatomy of the parts to be treated, also of the bladder and other adnexa. At all times the cutting field must be free from blood, and in good view, with complete orientation, otherwise some grave damage will take place.

Preparation for this operation is just as essential as we make for prostatectomy by open method, such as: Blood pressure reading, cardiographic studies, attention to focal infection, blood chemistry, notation of improved clinical symptoms, together with the retained catheter for the continuous relief of urine.

Anesthetic: In a few of my cases I have used spinal anesthesia, but in the majority of cases I use the sacral-block, which I think is preferable. The amount used is about 35 cc. of two per cent solution

of novocain. No danger or serious consequences have resulted.

Danger: The greatest danger following this operation is hemorrhage. In one of my cases a secondary hemorrhage developed about four hours following the operation. It was so bad and the bladder became distended to the extent that I had to do a suprapubic cystotomy, and pack the cavity. However, the patient recovered. While this hemorrhage is very disagreeable, yet by early recognition it can be controlled, if seen before the bladder becomes filled with blood clots. Through the cystoscope the bleeding point can be coagulated under direct vision, and the hemorrhage checked. When the bladder has become distended, then as soon as recognized, suprapubic cystotomy should be performed and bleeding points checked.

Danger By Infection: This is a factor which can be avoided by proper preparation, as described above, but in addition I usually inject one-half ounce of two per cent mercurochrome into the bladder immediately following my operation, and this is repeated twice daily for four days. Also, the bladder washes should be used if troublesome clots are present.

I have had several minor complications, such as epididymitis, which is not dangerous, but unfortunate, as it prolongs and retards recovery.

In one other rather interesting case, while trying to control a small bleeder with the coagulating current, near the verumontanum a small fistula was made by the fulgerating point. This, however, healed and patient at this time is in good post-operative condition.

At this time I have performed one hundred and one transurethral resections. Of this number the cautery punch method was used in fifty-six cases, and the resectotome and resectoscope in forty-five. In a few of these I have had to make the second operation.

Summary: Prostatic resection has come to stay. Many improvements will be made, but this method will be practically universally adopted.

The laity has become fairly well informed on this method and the individual patient will readily choose it in preference to prostatectomy. So the urologist must be prepared to undertake this work.

There is no operation in the field of urology which offers greater relief to the

sufferer, nor one which will incur a more everlasting gratitude from the patient who has been cured without undergoing the hazards of the old method of prostatectomy.

DERMATOMYOSITIS: REPORT OF CASE

John C. McGarrah, Cohoes, N. Y. (Journal A. M. A., March 3, 1934), relates the progress of a case of dermatomyositis with recovery. The outstanding features of the case are the preliminary influenza type of cold, the low grade arthritis, the low grade febrile reaction, the eosinophilia, the inflammatory process in the muscles of the upper and lower extremities, the stiffening of the wrists, fingers and ankles with the involvement of the peri-articular structures, the rash of slightly raised papules becoming confluent, the slow convalescence and the final difficulties due to scar contracture. The return of the percentage of eosinophilic cells to within normal limits in approximately four weeks after the inauguration of treatment with an autogenous vaccine from the probable focus of infection, together with the pronounced clinical improvement in the same period, suggests the possible value of this type of therapy in cases of dermatomyositis.

PROCEDURES FOR TREATMENT OF MYELOGENOUS LEUKEMIA

According to U. V. Portmann, Cleveland (Journal A. M. A., Jan. 20, 1934), the technical factors governing the dosage of roentgen irradiation for myelogenous leukemia are relatively unimportant so long as the intensity of the rays is therapeutically effective in the region to which they are applied: Myelogenous leukemia is ultimately a generalized disease, progressively affecting certain regions of the body, and the order of the regions affected and the rate of progression vary in different persons. An abnormal white blood cell count is the result and not the cause of the disease and is significant only when physiologic processes of certain organs are not normal. In administering radiation, it is illogical to irradiate always and as a routine the whole or a single part of the body. Instead, an effort should be made to discover which vital functions are particularly affected in each patient so that treatment can be administered to the areas involved.

CHRONIC RECURRENT DISLOCATION OF THE PATELLA

Wallace H. Cole and George A. Williamson, St. Paul (Journal A. M. A., Feb. 3, 1934), believe that in the chronic recurrent type of dislocation of the patella, a combination of operations may be necessary. The best method in their hands for reinforcing or tightening the relaxed structures on the medial side of the knee is a fascial transplantation. Straightening the line of pull of the exterior mechanism is best accomplished by the procedure described by Goldthwait or by one of its modifications. Raising the anterior surface of the lateral condyle of the femur is the best method for increasing the bony barrier against lateral displacement of the patella. The uses for this type of operation alone are more limited, but good results are obtained in properly selected cases.

CHRONIC GONORRHEA IN THE MALE.

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It can well be said that gonorrhea is one of the oldest, most prevalent, most treated and most mistreated diseases in existence. Its progress through the ages has left in its wake a blind, halt, maimed, sterile and sexless multitude. After a lapse of centuries, we are no nearer the solution of the cure than were our predecessors. About 95 per cent of gonorrhea is still being treated by the general practitioner, who admits he knows nothing about it. Also, most of the urologists are only interested in the surgical treatment of the disease. It can well be said that gonorrhea is the "Step Child of Urology."

By the term, chronic gonorrhea, we usually mean an uncured case of gonococcal infection that has continued for a period of three to five months. However, this term is an arbitrary one and by no means accurate, as a chronic case may be interrupted by acute exacerbation. Most of our text books say the disease can be cured in four to six weeks. I have yet to see a case of posterior urethritis that has ended in complete restoration to normal condition in less than four to six months. I believe that in 95 per cent of cases the infection passes the cutoff muscle and invades the posterior urethra. The idea is prevalent among physicians that the compressor urethra muscle acts as a barrier to the disease. It does not.

Gonorrhea does not progress by surface extension alone. It is a surface disease for a short time only, for no sooner does it reach the edge of the epithelial cells than it burrows down into the submucosa and enters into the lymph channels, and some times with surprising rapidity. After reaching the posterior urethra it finds a favorable habitat in the forty or more urethral follicles and of the common ejaculatory ducts and may extend into the seminal vesicles and down through the vas deferens into the epididymus. Since the gonocci have abundant room in these glands to multiply, the clinical symptoms become manifest only, when the gland tubules become filled with bacteria and inflammatory exudate. We believe that the time required for the extension of the dis-

ease into these posterior structures is from two to three weeks.

There are still physicians who assert that gonorrhea is a purely local and self-limited disease, from which a patient may be expected to recover within a reasonable length of time, with or without treatment. It is true that many infectious diseases do subside in a given time without treatment, provided the patient possesses the requisite resisting powers, but if gonorrhea has ever subsided without treatment the literature which I have examined fails to reveal such a report. Ample evidence proves that it is not self-limited, and in chronic form may persist for many years. The organism remaining entrenched in impregnable anatomical situations, lying quiescent for an indefinite period to assume its original virulence at any time. Transmission of the disease has been known to occur many years after the patient has been pronounced clinically cured.

The symptoms of chronic gonorrhea are many and varied. The only one present may be the classical "morning drop," or there may be a train of symptoms extending from the urethral meatus to the kidney. They may be classified into three types, namely: sexual, urinary and sensory.

1. Sexual symptoms manifest themselves by:

1. Premature ejaculations.
2. Perineal pain.
3. Prostatorrhoea.
4. Impotence, partial or complete.

II. Urinary symptoms are:

1. Painful, difficult urination, often with retarded stream.
2. Finding in the urine of shreds, phosphates, pus and sometimes blood.
3. The sensory symptoms are varied in character. Very often the chief complaint is a vague pain referred to a remote part of the body. A large number of men suffering from sensory phenomena visit the offices of physicians year after year, going from one doctor to another, receiving from each a fruitless, protracted

and usually painful course of treatment. Although excessive treatment is harmful, these patients cannot be neglected.

Clinically, we divide this disease into the chronic anterior and the chronic posterior urethritis—a clear differentiation must be made in order to institute the proper treatment.

The diagnosis of chronic anterior urethritis is made by the usual findings of pus at the meatus, the two glass urine test revealing pus in the first but none in the second. There are no palpable abnormalities in the prostate or seminal vesicles and no pus found in the secretions expressed from these parts. A smear may or may not show the extra or intra-cellular gram negative diplococci but very often shows shreds of connective tissue and pus cells or other bacteria. Also, in every case a sound or olive tip bougie size 26-28 should be passed to the cutoff muscle to determine presence of stricture.

Chronic posterior urethritis and chronic proctitis can rarely be distinguished from each other; indeed, posterior urethritis is clinically synonymous with chronic follicular proctitis. Chronic inflammation of the seminal vesicles is always associated with chronic proctitis. These are the cases which show disturbances of urination, reflex pain, abnormal sensations and disturbances of the sexual function. We may get symptoms simulating renal colic, neuralgia of the testicle and cord, relapsing epididymitis or gonorrheal rheumatism. We may find pathological changes in the vera montanum, such as erosions, granulations, cysts, polyps, hypertrophy or simple congestion. Diagnosis is made by the two glass test, rectal palpation, urethroscopic and cysto-urethroscopic examination.

Chronic gonorrhea is the field for instrumental diagnosis and treatment. The two main objects in the treatment of this disease are to promote drainage and to increase the resistance of the patient.

I believe that many a urethritis fails to get well for lack of a meatotomy.

In doing a meatotomy, make an incision deep enough to cut the posterior meatus so it will comfortably admit a size 30 French sound. It will contract to a 28 or 29 in a short time, but this will leave ample room for free drainage. All strictures must be dilated beyond their capacity as

they have a persistent tendency to contract. This is an outstanding characteristic of a true stricture and the patient should be warned that every new attack of gonorrhea may cause the old lesion to reappear or new ones to form.

Gentle dilation with the sound is done to cause the resorption of the infiltration of the mucosa and drainage of the glands and crypts. It also causes a mild hyperemia, a straightening out of the urethral canal with an emptying of the inflamed glands. The acute congestion produced must pass before the sound is introduced again. Injection of one-half of one per cent protargol or irrigation of 1-10,000 potassium permanganate solution should follow each dilation. The chief aim is to soothe and heal the mucosa. Local applications made under the eye through the cysto-urethroscope, whether they be electrical or chemical, constitute a very useful and successful therapy.

Massage of the prostate once or twice a week may be profitably begun as soon as the acute inflammation subsides. Recent observations have shown that the gonococci thrive in the spermatic fluid.

In addition to local therapy, we insist on abstinence from sexual indulgence and alcohol, advise removal of any foci of infection, such as teeth and tonsils, and encourage a liberal diet with proper elimination to increase bodily resistance.

SUMMARY.

1. A negative smear is not dependable.
2. Do a meatotomy at once if meatus is small.
3. All prostatic secretions should be examined under the microscope.
4. The cysto-urethroscope reveals lesions in the posterior urethra and is very necessary in treating them.
5. Relapsing epididymitis should be operated.
6. Vaccines and intravenous therapy rarely promote a cure.
7. The majority of cases will be cured by a systematic course of prostatic massage, followed by sounds of sufficient size to dilate the urethra with the least amount of trauma. Injections or irrigations of any mild antiseptic to soothe and heal the mucosa.
8. One must promote drainage and increase the physiological resistance of the patient before a cure is accomplished.

SUBPHRENIC ABSCESS FOLLOWING APPENDICEAL ABSCESS.—NATHER-OCHSNER METHOD OF DRAINAGE WITH A CASE REPORT.

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TULSA.

Since the day of Barlow and Leyden our store of knowledge concerning subphrenic infections has been richly enhanced. However, the high general mortality which still attends subdiaphragmatic abscess renders it a fit subject for continued study and discussion. As there have been numerous and, often, very complicated anatomical classifications of this region, it seems necessary to state that Nather's classification so comprehensively yet briefly given in Ochsner's¹ last paper on this subject has been adopted for the purpose of this paper. The subphrenic space—"that area located between the diaphragm above and the transverse mesocolon and the transverse colon below"—is composed of two main regions, the supra and infrahepatic. The suprahepatic is further divided into four parts, one extraperitoneal (between the layers of the coronary ligament) and three intraperitoneal. These are (1) the left suprahepatic (to the left of the falciform ligament); (2) right anterior suprahepatic (to the right of the falciform ligament and anterior to the right lateral ligament); (3) right posterior suprahepatic (to the right of the falciform ligament and posterior to the right lateral ligament). The infrahepatic space is composed of two spaces to the left of the round ligament and the ligament of the ductus venosus and one to the right. The posterior space to the left lies behind the gastrohepatic omentum and is really the lesser peritoneal cavity. The anterior lies in front of the lesser omentum. These spaces are known as the posterior and anterior left infrahepatic region, respectively.

Since this paper deals only with those abscesses following appendicitis, we are chiefly concerned with the right posterior suprahepatic space and the right infrahepatic space. While it is possible for an abscess to form in any of the subdiaphragmatic regions mentioned following appendicitis, particularly in cases where a general peritonitis has followed appendiceal inflammation, reported series of cases show an involvement of the re-

gions mentioned almost to the exclusion of the others. The mode of spread of the infection may be along either side of the ascending colon by direct extension or through the retroperitoneal lymphatics. Again, an ascending cellulitis of the retroperitoneal tissues account for some cases, and in these the extra-peritoneal space is usually, if not always, involved; finally, in some instances, thrombophlebitis of the portal vessels occur with the development of liver abscess or abscesses, the rupturing of which produces subphrenic infection.

The most recently reported series of cases of subphrenic abscess in this country is that of Flynn² who, in 1932, compiled his data from a questionnaire sent members of the Southern Surgical Association. He gives appendicitis as the etiological factor in 54 per cent of cases—in a series of 346. Perry,³ in 1927, reported a collection of 496 cases, in which the appendix was the source in 25.3 per cent. Fifield⁴ and Love, in 1926, reported 35.7 per cent of their 84 cases as being the same origin. Whipple,⁵ reviewing 1,000 cases in 1926, found 21 per cent of them having this source. It therefore, seems safe to say that at least 20 to 25 per cent of all cases follow appendicitis. The gastroduodenal region and the biliary passages share importance etiologically with the appendix. When we come to discuss the diagnosis, a chief reason for the appalling mortality is found, as it is at once evident that in the majority of instances the correct diagnosis is definitely made only late in the disease. There seems to be two principal causes of this delay: (1) Failure to consider the possibility of such infection; (2) a tendency to procrastinate until advanced signs and symptoms are present, confusion apparently being occasioned by chest findings and non-confirmatory x-ray findings.

"Pus somewhere, pus nowhere else, therefore, pus under the diaphragm." Fi-field and Love offer this aphorism as a means of keeping the condition in mind. Like extra-uterine pregnancy, the diagnosis is usually not difficult, provided the possibility of the condition be considered. Diagnosis rests on (1) a consideration of the history; (2) pain and constitutional symptoms; (3) physical signs; (4) roentgenologic examination.

The history of an attack of appendicitis, or of an abnormal crisis that could

be interpreted as such within four months (occasionally even longer), should immediately rule in the possibility of subphrenic abscess. It goes without saying that a history of suppuration originating from an appendix, either drained or undrained, makes it necessary not merely to consider the possibility, but to definitely rule out the presence of a subphrenic infection when there is continued fever, leukocytosis and pain.

Fever of a septic type, even though slight, loss of weight and strength, pain in the upper right abdominal quadrant or in the right loin, or above the right supraclavicular region, demands that subphrenic abscess be considered. Pain along the right twelfth rib is common. Neck pain is considered rather diagnostic of suppuration near the central portion of the diaphragm, as brought out by the experimental work of Capps and Coleman, and exemplified in the case reported by Christopher.

On physical examination there is usually tenderness and increase of muscular tone, even to rigidity in the upper right quadrant or in the loin—particularly over the right twelfth rib when the right posterior suprahepatic space is involved. Pain about the right costal margin anteriorly usually indicates involvement of the right infrahepatic region. Bulging at any point is ordinarily only a late symptom and should not be expected. (Again one should not expect to find the classic area of tympany surmounting a dull region followed by dullness again above.) Only a minority of cases have this, and besides a gas-filled transverse colon may cause error. Depending on the amount of compression of the lower right lung lobe and upon the presence or absence of extension of the inflammatory process to the pleura and lung, the physical signs over the thorax vary. Most cases show some pleural exudate and it is common to find impairment of resonance, diminished breath sounds, and crepitant rales over the lower right lung posteriorly. In fact, the condition is most frequently confused with pleurisy, with effusion or empyema. In making the differentiation the history is usually invaluable.

Roentgenologic examination is exceedingly valuable, and when proper technique is employed is probably the most important single aid to diagnosis. Brown,⁶ Pancoast,⁷ Le Wald,⁸ O'Brien,⁹ Granger,¹⁰ Mc-

Namee,¹¹ Hodges¹² and others have contributed in this field. From a study of their methods and recommendations the following principles seem established: (1) There should be a careful correlation of the history symptoms and physical signs with the x-ray findings. (2) Fluoroscopic examination is invaluable. (3) Both anterior-posterior and lateral views should be employed. (Granger advocates posterior-anterior view.) (4) Repeated examinations are indicated if any doubt exists. (5) The patient should be in the upright position if his condition permits—with present-day tables this is usually possible. With regard to the x-ray findings, early cases usually present more or less elevation of the diaphragm with limitation of its excursion. *It is not necessary that it be fixed.* Later, the diaphragm may become abnormally arched and irregular in its outline.

In emphasizing the necessity for lateral views, Brown has pointed out the anatomical fact that the posterior attachment of the diaphragm is on a lower level than the anterior, and that the right posterior attachment is lower than the left. Since the right posterior suprahepatic region is the one most often involved, a lateral view is necessary, as early cases of infection in this region might otherwise escape recognition. A minority of cases show the classic findings of a gas bubble above a fluid level, both beneath the diaphragm.

The moot question of aspiration is now reached. This was purposely not included under methods of diagnosis because it seems that most recent writers agree that needling is not only unsafe, but not particularly valuable. Ochsner¹ declares that it is justifiable to aspirate the pleural cavity in order to determine the character of exudate present, but aspiration of a suspected subdiaphragmatic abscess should be done only in the operating room with everything in readiness for surgical drainage, and then every precaution against entering the pleural or peritoneal cavities should be taken. To this latter end, he advocates introduction of the aspirating needle at the level of the spinous process of the first lumbar vertebra in the posterior axillary line—the needle being directed upward at an angle of 45 degrees to the skin below its hub. Lockwood¹³, Russell, Hodges, Grove, in addition to Ochsner, condemn aspiration. Russell declares, "I have never been able to see any more reason for aspirating a suspected

subphrenic abscess than for aspirating a suspected pelvis or appendiceal abscess, the practice of which has been abandoned for the last forty years." However, Ulman and Levy,¹⁶ and later Allen and Douglas,¹⁷ consider the procedure justified. In view of the fact that the pus is often so thick it cannot be successfully aspirated, and again, the extreme difficulty often experienced in locating the pus collection — (Ochsner quotes Hirsch's case in which pus was found only on the twenty-fourth attempt), it seems that the possible advantages are far outweighed by the dangers which are obvious. Since the development of roentgenologic technique to its present point so that not only the presence of the abscess but its probable exact location can be determined, there seems to be no place for the method except during the actual course of operation.

Upon the question of the principle of treatment, once an abscess has developed, all are agreed surgical drainage is absolutely indicated. It is not necessary to give statistics here, as they are too well known, and there is no room for argument. However, the method of application of the principle involves much discussion which cannot be entered upon. All recognized procedures fall into four groups: (1) The transperitoneal. (2) Transpleural. (3) Subpleural. (4) Extraperitoneal. The disadvantages of the methods falling into the first two groups are inherent and obvious, in that through them the two great serous cavities are exposed to the danger of infection. The procedures in the third group are modifications of the retroperitoneal operation of Nather and Ochsner and apparently enjoy no advantages over it while presenting several disadvantages. Graf¹⁸ is the author of the subpleural modification, while Elkin¹⁹, using the incision and rib resection of Nather-Ochsner obliterated the costo-phrenic angle and drained through it. A brief discussion of the relative merits of these modifications is given in Ochsner's article in *International Clinics* for June, 1931. The fourth group contains the extraperitoneal operation devised by Clairmont which is an excellent method for those cases in which the right anterior and left suprahepatic spaces are involved. In these cases there is usually bulging at the anterior costal margin. Incision is made paralleling the costal margin and deepened to the peritoneum which is then separated from the anterior abdominal wall and from the under surface

of the diaphragm until the abscess is reached and drained. This procedure is entirely satisfactory for the minority of cases in which the abscess is so located.

It is believed that the extraperitoneal technique developed by Nather and Ochsner and published by them in 1923, is the most valuable contribution that has been made to the surgery of these infections. Unfortunately, popular acceptance has been singularly slow, and for this reason a large series of cases so treated is not available. However, the remarkable drop in the mortality rate in the series reported to date must force acceptance upon us. In nineteen cases reported by Ochsner, there was one death, a mortality rate of 5.2 per cent. Flynn, in 1932, reported thirty-eight cases, in which the retroperitoneal approach was used; there were seven deaths, a mortality of 18.4 per cent. It is interesting to note that in the same series the mortality rate from transpleural or transperitoneal procedures was 41 per cent. Of course, this comparison is open to the criticism that there were 275 cases treated by the latter techniques.

Sayre warmly commends the Ochsner operation in his recent paper on subphrenic infection. Doherty and Rowlands, writing in the *London Lancet*, give the advantages of the extraperitoneal, as opposed to the transpleural route. It would, therefore, appear that the method is standing the test of mortality rate and time well, and it seems that in this direction lies one hope of relieving the too great mortality. A brief description of the technique will be given in the following case report. A full description, with excellent illustrations, appears in the original article in *Surgery, Gynecology and Obstetrics*, 1923, Vol. 37, pp. 665-673.

J. W., colored, widowed, aged 39, a resident of Tulsa, Oklahoma. Admitted to Municipal Hospital July 1, 1932, complaining of a huge abdominal swelling which had attained such proportion that she was unable to breathe easily and was vomiting frequently. The history indicated that patient realized presence of tumor only in March of that year, but its great size impressed one with the belief that it either had been present for a longer period than that, or had increased very rapidly in size as a result of hemorrhage or malignancy. Menses had ceased since March, 1932, and aside from urinary frequency and the symptoms already recounted incident to the increased intra-abdominal pressure, there were no others. Physical examination revealed a colored woman of about forty years with the "pinched facies," so often associated with large ovarian cysts. There was evidence of recent marked loss of weight. Abdominal examination disclosed a marked enlargement, symmetrical in outline, extending over the entire ab-

domen, making it tense and shiny. A distinct fluid wave could be elicited, but there was no shifting dullness in the flanks. Although the abdomen was quite tense, it seemed that a mass extending upward almost to the xyphoid process and laterally into the flanks could be palpated. Its consistency was not hard, like that of the usual fibroid; other than this, no information could be obtained. There was no tenderness, and no viscera were palpable. On vaginal examination the perineum was that of a nullipara, moderate mucoid discharge, vaginal mucosa somewhat congested in appearance, cervix softened and pointed forward, and apparently continuous with abdominal mass—movement of cervix caused a corresponding movement of abdominal tumor. Body of uterus could not be outlined, nor could adnexa. Rectal examination negative. Remainder of general physical examination revealed no abnormalities. Diagnosis of ovarian cyst with ascites versus soft uterine fibroid with ascites was made and possibility of a malignant degeneration of either of these conditions was considered.

On July 5, through a midline incision under spinal anesthesia, a huge, multilocular ovarian cyst, weighing sixteen pounds, was removed. The specimen completely filled a five-gallon glass container. About 1500 cc. of ascitic fluid was present, and there were numerous peritoneal cysts ruptured during the tumor's delivery. The cyst was intraligamentary on the right side, and was attached by well-organized adhesions to the under surface of the liver, gall-bladder, right kidney region, and to the transverse colon. As considerable time was consumed in removing the cyst and the operation was being done under spinal, the abdomen was immediately closed without the usual prophylactic removal of the appendix. The patient made an uneventful recovery and left the hospital in twelve days.

On July 29, patient presented herself at our office, complaining of abdominal pain, and fever of about five days' duration. On examination her abdomen was found to be quite tender, rigid and slightly distended in the lower right quadrant, in which area there seemed to be a palpable mass. She declared that a few days after leaving the hospital she had some pain in the right lower abdomen, to which she paid no attention, until it became fairly severe after a few days' duration. A diagnosis of a ruptured appendix, with formation of appendiceal abscess, was made, and the patient at once referred to the hospital. She was kept in bed, with an ice cap to the abdomen, and the head of the bed elevated, until August 9. During this period, temperature fluctuated between normal and 101 degrees—temperature being normal from August 7 to 9. On the latter date, under spinal anesthesia, the abdomen was opened through a McBurney incision, and appendiceal abscess drained, without contaminating the surrounding peritoneum. No attempt was made to remove the appendix. The wound drained freely, and after August 14 temperature was normal. At this time her general condition was fair, but she displayed the depletion and malnutrition incident to sepsis.

On October 1 our office was notified that the patient had suffered a fairly severe chill on the evening of September 27, followed by pain in the upper right abdomen and loin. On the following day pain continued and fever was present. Pain had gradually increased, accompanied by fever and occasional chilly sensation, until we were notified. The interval between this fresh illness and discharge from the hospital on September 2, had been free from abnormal

incident, and patient had increased somewhat in weight and strength. She was again ordered to the hospital, entering with a temperature of 102, pulse 140, respiration of 28, general condition quite poor. Examination of the thorax revealed decreased fremitus and impaired resonance on percussion over the lower right thorax from the eighth rib down; in this area breath sounds were diminished and a few crepitant rales could be heard. There was no friction rub. The upper right abdomen, just beneath the costal margin, was tender on palpation and there was some rigidity of the muscles, but no bulging. There was definite tenderness along the right twelfth rib, most marked at its tip, and this tenderness, in a lesser degree, was present over the right loin. There was no neck pain or pain in the right shoulder blade. Total leucocyte count was 26000, with a decided shift in the Schilling count to the left. Urinalysis was negative. In view of the recent recovery from an appendiceal abscess, subdiaphragmatic infection was at once considered, as was the possibility of an empyema on the right side. Patient was kept in bed in the Fowler position, fluids forced by mouth and hypodermoclysis. General condition continued very poor, with a high pulse rate and septic temperature, and on October 5 an x-ray examination to determine position of right diaphragm and condition of right pleural cavity was made. Only an anteroposterior view was made and the x-ray report is here quoted: "The x-ray reveals an obliteration of the right costo-phrenic angle with possibilities of fluid, pus, or pleural adhesions. This, however, should be ascertained by aspiration." As it was necessary to move the patient across town, from the colored Municipal Hospital to the City Hospital for such x-ray examination, no repetition of the roentgen ray survey was ordered, because of patient's poor condition. Several aspirations of the right lower pleural cavity proving negative, and the history and clinical findings pointing so strongly to subphrenic abscess, it was decided to operate for this condition. The patient's critical condition, and the probability of the abscess being in the right posterior superior space and probably also in the corresponding right subhepatic area, decided us in favor of the retroperitoneal technic of Nather and Ochsner. Accordingly, under spinal anesthesia, the right twelfth rib was resected subperiosteally, the renal fascia exposed and followed upward to its continuation with the posterior parietal peritoneum. The peritoneum was carefully dissected from the under surface of the diaphragm for a short distance, and then broken into with the finger, and a large amount of very foul-smelling pus obtained. It was apparent from the edema and bulging that the subhepatic area was likewise infected, and this was next broken into, and two large, soft, rubber tubes were introduced into the respective cavities. About 800 cc. of purulent material drained immediately from these pockets. Patient left the operating table in somewhat better condition than before operation was begun. Her convalescence was somewhat prolonged, due to an infection which developed in the perirenal fat, but she steadily improved and there was little fear at any time of a fatality. She was discharged on November 24, 1932, in excellent condition. When last seen, about one month ago, she weighed 140 pounds, looked extremely well, had no complaints, and presented well-healed scars.

SUMMARY.

Subphrenic abscess, despite the attention given it and the numerous and excellent papers written about it, continues to

have a high mortality. It is believed that this can, and should, be reduced.

Early diagnosis is most important in securing this desideratum. A consideration of the possibility of the presence of the condition, careful attention to the history, clinical study of the case, and, probably most important, proper roentgenologic study should, in nearly every case, establish the correct diagnosis. It is felt that aspiration of the subphrenic region has no place among methods of diagnosis, except during the actual course of operation. Aspiration of the pleural cavity is, of course, not only permissible, but necessary, in difficult cases.

Surgical interference is absolutely indicated, once the diagnosis has been made. The employment of the retroperitoneal technique, in the large group of cases in which it is surgically feasible, should logically be followed by a reduction in mortality, as well as morbidity—as it has already been, notably in the cases of Och-sner.

A case is reported in which the use of the retroperitoneal technique resulted in a favorable outcome, although the patient was seriously ill.

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*Presented May 16-17, 1933, Surgical Section Oklahoma State Medical Association.

Suite 823, Wright Bldg.

—O—

SQUIBB HALIBUT-LIVER OIL CONCENTRATE TABLETS WITH VIOSTEROL 250-D

A new product that has just been released by the Squibb Laboratories is Squibb Halibut-Liver Oil Concentrate Tablets with Viosterol 250-D. These highly potent, chocolate-coated tablets will be prescribed by physicians as an alternative means of administering the vitamins of Viosterol-fortified Halibut-Liver Oil.

Each tablet equals in Vitamin A and D potency, 10 drops (approximately 10 mins.) of Squibb's Stabilized Halibut-Liver Oil with Viosterol 250-D. The vitamin-potency of the tablets is protected by the same methods that have been found to be so successful in affording similar protection in the manufacture of Adex Tablets.

—O—

WHAT EVERY WOMAN DOESN'T KNOW—HOW TO GIVE COD LIVER OIL.

Some authorities recommend that cold liver oil be given in the morning and at bed time so as to assure an appetite for the oil, while others prefer to give it after meals in order not to retard gastric secretions. If the mother will place the very young baby on her lap and hold the child's mouth open by gently pressing the cheeks together between her thumb and fingers while she administers the oil, all of it will be taken. The infant soon becomes accustomed to taking the oil without having its mouth held open. Mead's Newfoundland Cod Liver Oil, of minimum acidity and prepared from fresh, healthy livers, is well tolerated by infants and children, and is palatable without flavoring.

If given cold, cod liver oil has little taste, for the cold tends to paralyze momentarily the gustatory nerves. As any "taste" is largely a metallic one from the silver or silver-plated spoon (particularly if the plating is worn), a glass spoon has an advantage.

Mead's 10 D Cod Liver Oil is made from Mead's Newfoundland Cod Liver Oil. In cases of fat intolerance the former has an advantage since it can be given in one-third to one-half the usual cod liver oil dosage.

THE JOURNAL

OF THE

Oklahoma State Medical Association

Issued Monthly at McAlester, Oklahoma, under direction of the Council

VOL. XXVII MAY, 1934. No. 5

DR. L. S. WILLOUR..... Editor-in-Chief
McAlester, Oklahoma.

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Medical Arts Building, Tulsa, Okla.

Entered at the Post Office at Muskogee, Oklahoma,
as second-class mail matter July 28, 1912.

This is the official Journal of the Oklahoma State Medical Association. All communications should be addressed to The Journal of the Oklahoma State Medical Association, 203 Ainsworth Building, McAlester, Oklahoma. \$4.00 per year; 40c per copy.

The editorial department is not responsible for the opinions expressed in the original articles of contributors.

Reprints of original articles will be supplied at actual cost provided requests for them is attached to manuscripts or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, 203 Ainsworth Building, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

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EDITORIAL

COME TO TULSA.

The officers of your association, as well as the section officers, have done everything possible to prepare a program for the Tulsa meeting that will give to the doctors of the state scientific information up to date and well worth your time and attention. The Tulsa County Medical Society has organized this meeting in such a manner that the program will be "put over" without a hitch, and the entertainment features will, I am sure, be greatly enjoyed by all participants.

It has been our observation that the best doctors in the state attend these meet-

ings. Of course, you may be a good doctor and not attend, but you will be a better doctor if you do. The very contact with your fellow practitioners is well worth the time and expense. You need this meeting, and organized medicine in Oklahoma needs your presence and interest, particularly at this time, when not only professional subjects are to be discussed, but grave economic problems demand our careful consideration.

Give of your time and talent to this organization which is trying to do everything possible to forward the aims of organized medicine and maintain the highest professional and economic standards.

RED MEDICINE

There are today potent influences at work, the objective being the socialization of the practice of medicine. Twice in the past week I have received, to release to the lay press and for use in the Journal, the manuscript of addresses by Mr. John A. Kingsbury, who is the Secretary of the Milbank Memorial Fund, which institution is putting out much misinformation relative to medical economics.

It appears that in the summer of 1932 this gentleman spent five weeks in Russia inspecting the medical system and came back quite thoroughly sold on "Red Medicine". In this system all doctors become state officials, only a few of the older men retaining private practice. These state doctors have fixed hours for work; they are paid by the government a salary amounting to about the same as a teacher, and even less than an expert mechanic. All of the doctors are over-worked in an attempt to meet the demands of the large number of patients. There is a rule that they must give each patient ten minutes' time or see six each hour. It is evident that history-taking and examinations are very superficial and incomplete. At the medical center the patient may choose his doctor, but if a call is to be made to the home he must accept the doctor assigned to that particular district.

Under this system the practice of medicine is a quantitative thing, the element of individual interest being eliminated. It might be acceptable to a socialist nation, but a very poor method to pursue among a freedom-loving people. Quoting from a letter written by Sir James Purves Stewart: "It seems to me that, boiling it down

crudely to bedrocks, everything depends on whether we accept the communist dogma that all men are equal, and therefore deserving of equal rewards from the state, whether they are idle or industrious, extravagant or thrifty, intellectually dull or alert. Once the primary axiom is accepted, all the rest follows as a matter of course. But some of us cannot swallow the fundamental principle."

This propaganda of Kingsbury's is reaching the lay readers and they are taking it to be gospel, consequently it is the duty of the medical profession to see to it that this "Red Medicine" movement is met by an honest effort and an honest statement of facts regarding the matter.

We are not standpatters as to the present system of practice, but will stick to it until such time as a constructive program is advanced, and not run off after this communistic rot.

Editorial Notes—Personal and General

DR. J. M. ALLGOOD, formerly of Gould, announces his removal to Altus.

DR. ROY M. SWEENEY, Sapulpa, who has been ill following an operation, is reported improved.

DR. J. N. HARBER, Seminole, has returned from Arizona where he has been for the past several months.

DR. T. A. HILL, Watonga, has been appointed Secretary of Blaine County Medical Society, to replace Dr. W. F. Griffin.

DR. J. W. MCCLENDON, Earlsboro, has been appointed to succeed Dr. Thomas H. Berry, former medical superintendent of the state hospital at Supply.

THE DALLAS SOUTHERN CLINICAL SOCIETY had the following Oklahoma doctors in attendance at their meeting in March: Doctors L. C. Vance, Ponca City; E. E. Conner and J. H. Hollis, Mangum; O. G. Bacon, Frederick; C. C. Gardner, Atoka.

THE AMERICAN MEDICAL GOLFERS' ASSOCIATION will hold its twentieth annual tournament at the Mayfield Country Club in Cleveland, Monday, June 11, 1934. All male fellows of the American Medical Association are eligible and cordially invited to become members of the A. M. G. A. Write the Executive Secretary, Bill Burns, 4421 Woodward Ave., Detroit, for application blank. Participants in this tournament are required to furnish their home club handicap, signed by the secretary. No handicap over 25 is allowed, except in the Kickers. No trophy is awarded a fellow who is absent from the annual dinner.

THE AMERICAN ASSOCIATION FOR THE STUDY OF GOITER will hold its annual meeting at Cleveland, Ohio, June 7, 8, and 9, 1934, which is the week preceding the meeting of the American Medical Association. This meeting is held under the presidency of Dr. R. M. Howard of Oklahoma City. It is impracticable to publish the program in detail; however, the goiter subject will be discussed in all its phases by the leading authorities of the United States, and you can be assured of a most interesting and instructive program.

THE BULLETIN OF THE AMERICAN SOCIETY FOR THE CONTROL OF CANCER

The Oklahoma State Medical Association takes a very keen interest in anything which would tend to increase the knowledge of cancer among the physicians of the state. The Society thinks that the above mentioned bulletin is a very useful instrument for this purpose. It contains a number of short practical articles written by distinguished authorities in the field of cancer therapy and cancer research. It offers, at a subscription price of only \$1.00 per year, an easy and practical way for the physician to keep abreast of cancer control progress. A complimentary copy of the bulletin will gladly be sent to any physician requesting it from the American Society for the Control of Cancer, 1250 Sixth Avenue, New York City.

News of the County Medical Societies

BLAINE COUNTY MEDICAL SOCIETY met in regular session March 15th, at Watonga. Dr. A. B. Chase, Oklahoma City, cardiologist and Councilor of District No. 4, gave a short address outlining the advantages of an active county society.

Dr. A. H. Akin, Oklahoma City, urologist, gave an interesting paper on "The Obstructing Prostate," using motion pictures.

Dr. Onis G. Hazel, Oklahoma City, dermatologist, presented a paper on "The Newer Concept of Fever Therapy in Neuro-Syphilis."

OKMULGEE-MUSKOGEE COUNTY MEDICAL SOCIETIES held a joint meeting in Muskogee March 12. Okmulgee County Society prepared and presented the following program: "Points in Pediatrics," J. K. Cotteral, Henryetta; "Hypertension," M. D. Carnell, Okmulgee; "Radiation of the Pituitary Gland for Menstrual Disorders," W. C. Vernon, Okmulgee; "Injection Method of Treatment for Hemorrhoids," W. C. Vernon, Okmulgee.

OKMULGEE-MUSKOGEE COUNTY MEDICAL SOCIETIES held a joint meeting in Okmulgee March 26th. The following program was presented by the Muskogee County Medical Society: "Fractures," J. H. White; "Tularemia," H. T. Ballantine; "Gonorrhea and Its Relationship to General Medicine," S. D. Neely, all of Muskogee.

GRADY COUNTY MEDICAL SOCIETY met in regular session April 4th in Chickasha. Dr. J. M. Byrum, Shawnee, gave a paper on "Peritonitis"; Dr. J. W. Walker, Shawnee, gave a lecture on "Progress Medicine has Made." Drs. McFarland and Newlin, Shawnee, were also on the program.

WOODWARD COUNTY MEDICAL SOCIETY met April 10th, in Shattuck, and presented the following program:

Banquet supper, 6:00 P. M.

"Diagnosis Tuberculosis," Dr. Ellis Lamb, Clinton.

"New Conceptions Regarding Pulmonary Tuberculosis," Dr. R. L. Hickman, Supply.

"Chest Injuries and Management," Dr. C. R. Silverthorne, Woodward.

"Pneumonia, Diagnosis and Treatment," Dr. J. J. Davis, Higgins, Texas.

"Tuberculosis," Dr. Floyd Moorman, Oklahoma City.

DOCTOR ROSS GROSSHART

Dr. Ross Grosshart, Tulsa, prominent physician and surgeon, died at his home after a short illness.

He was born in Pittsville, Missouri, and obtained his early education there. After graduating from the University of Kansas in 1898, he served as an intern in St. Luke's Hospital, Kansas City, and practiced medicine in Rockville, Missouri, before coming to Tulsa in 1905.

Dr. Grosshart was president of the Tulsa County Medical Society twenty years ago, and has been an outstanding member since that time. He was founder of the Grosshart hospital many years ago, and later had an interest in the Physicians and Surgeons hospital. He was a thirty-second degree Mason, having been a member of this organization for about thirty years.

Dr. Grosshart is survived by his widow, one daughter and two sons.

SARCOMA OF CHEEK FOLLOWING TRICHO X-RAY TREATMENT FOR HAIR ON FACE

Ira I. Kaplin, New York (Journal A. M. A., Feb. 24, 1934), points out that repeated roentgen treatments may cause destructive lesions of the skin. Because of its potential danger, irradiation should be employed only by those qualified by special training and experience. These destructive changes may occur many months or even years after treatment. Malignant changes may occur following necrosis in an over-irradiated skin area. The removal of hair by x-rays is fraught with danger. The author reports a case in which sarcomatous degeneration followed repeated treatments with x-rays for hair on the face, applied by Tricho, a commercial beauty parlor.

URETHROCYSTOGRAPHY IN THE MALE

Previous experience with urethrography or cystography enabled Joseph A. Hyames, Herbert R. Kenyon and Samuel E. Kramer, New York (Journal A. M. A., Dec. 23, 1933), to develop a technic for the performance of urethrocytography by combining several procedures previously advocated by other workers with a simplified manometrically controlled sy-

ringe devised by them. The patient is placed on an x-ray table equipped with a Bucky diaphragm. A small catheter is introduced under asepsis, the bladder capacity estimated with sterile water and a quantity of the 3 per cent solution of sodium iodide slightly less than the estimated capacity is introduced through the catheter, which is then withdrawn. The oblique and anteroposterior positions are most satisfactory. During the first exposure the patient is placed obliquely on the table, with the upper thigh flexed and the upper thigh extended. The penis is extended, below and parallel to the flexed thigh, and the urethral contrast solution injected through the meatus, the manometrically controlled syringe provides a safeguard against the use of excessive force. The total quantity of fluid used for urethral distention is approximately from 50 to 70 cc. The use of oily solutions increases the possibility of leakage. The tube is focused on the lower portion of the symphysis pubis and inclined toward the head at an angle of 5 degrees. The roentgen exposure is made as the fluid is flowing freely into the bladder. Should the flow be impeded, the patient is instructed to void as the exposure is made. If the bladder cannot be entered because of impassable obstruction, the bladder contents may be rendered opaque by the intravenous use of a contrast substance, after which the urethra can be filled in the ordinary manner. A second exposure is made with the patient in the dorsal position, the legs extended and the penis drawn down between the thighs. The roentgenograms are obtained by using an x-ray apparatus of the greatest penetration, thus diminishing the time of exposure. The authors have found it unnecessary to go above a pressure of 220 mm. of mercury. A drop in pressure of from 10 to 20 mm. is usually noted as the external sphincter relaxes. Pressures exceeding 200 mm. of mercury suggest the possibility of trauma, spasm, or lack of cooperation on the part of the patient, which may prevent satisfactory filling of the posterior urethra. Excessive pressures may result in mucosal injury and, when this occurs in the bulb, the contrast material may enter directly into the vascular system, owing to the intimate relationship of the vessels to the mucosa in this region. In the author's experience this has occurred only in cases of urethral stricture involving the bulbomembranous junction in which recent instrumentation had been attempted and manometric control was not employed. Although they have not observed any constitutional reaction or permanent ill effects following urethrovous injection, its occurrence emphasizes the necessity of employing innocuous solutions. Following instrumental, exploration of the canal, an opportunity should be afforded for the traumatized urethral areas to heal before urethrocytography is performed. Should both roentgenographic and instrumental investigation be contemplated at one sitting, the former should precede other intra-urethral manipulations. Injections of contrast mediums are contraindicated in the presence of acute infection, active inflammations and recent extensive injuries. The authors discuss the interpretation of urethrocytograms, stricture of the urethra, enlargement of the prostate and observations following operations for vesical neck obstructions and state that the combined method has adequately demonstrated bladder, urethral and adnexal changes and has proved less expensive, less time consuming and more satisfactory as a routine diagnostic method than urethrography or cystography as individual procedures.

PROGRAM

FORTY-SECOND ANNUAL SESSION, OKLAHOMA STATE MEDICAL ASSOCIATION, TULSA, OKLAHOMA

MAY 21, 22, 23, 1934

Meeting Place—All meetings will be held in the Mayo Hotel. Telephone, Tulsa, 3-2141.

Registration—Sixteenth floor, Mayo Hotel. All physicians, except those outside the state and visiting guests, must hold membership for the year 1934 before registering. Please attend to this, if you are not in good standing, by seeing your County Secretary at once.

Women's Auxiliary—The Women's Auxiliary of the Oklahoma State Medical Association extends a cordial invitation to the women visitors at the state meeting in Tulsa, May 21-23, 1934, to attend the meetings and entertainment provided for women during the meeting. Registration will be held on the Mezzanine floor, Mayo Hotel. Monday, May 21st, 10:00 A. M., the State Executive Board will hold its meeting on the Mezzanine floor. (Complete program in the May issue of the Journal).

Medical Reserve Corps Dinner—Mayo Hotel, 6:00 P. M., Tuesday, May 22nd. Guest of honor will be Dr. Charles F. Craig, Colonel, U. S. Army, Rtd., Tulane University, New Orleans.

American College of Physicians—Luncheon, Tuesday Noon, Mayo Hotel for the Fellows and Associates of the College.

Guests of Honor—Dr. Donald C. Balfour, Mayo Clinic, Rochester; Dr. Chas. F. Craig, Colonel, U. S. Army, Rtd., Tulane University, New Orleans.

Council—The Council will meet at 3:00 P. M., Monday, May 21st, in the Lounge room, sixteenth floor, for the transaction of business affairs, and thereafter on call of the President.

House of Delegates—Will meet at 7:30 P. M., Monday, May 21st, Junior Ball Room, Mezzanine floor, and at 8:00 A. M., Tuesday, May 22nd, same place.

General Sessions—Will be held, beginning at 9:00 A. M., in the Crystal Ball Room, sixteenth floor.

TUESDAY, MAY 22.

9:00 to 10:00 A. M., moving pictures.

10:00 to 11:00 A. M., "Benign and Malignant Lesions of the Stomach and Their Management," Dr. Donald C. Balfour, Rochester.

11:00 to 12:00 A. M., "Amebic Dysentery," Dr. Charles F. Craig, New Orleans.

WEDNESDAY, MAY 23.

9:00 to 9:30 A. M., "Doctors in Politics," Dr. Louis H. Ritzhaupt, Guthrie.

9:30 to 10:00 A. M., Memorial Ceremony.

10:00 to 11:00 A. M., "Amebic Dysentery," Dr. Charles F. Craig, New Orleans.

11:00 to 12:00 A. M., "The Duodenum," Dr. Donald C. Balfour, Rochester.

SECTIONS

All Sections will meet at 1:30 P. M., Tuesday, May 22nd, and at the same hour on Wednesday, May 23rd. Meeting places will be as follows:

Surgery—Crystal Ball Room, sixteenth floor.

Medicine—Junior Ball Room, Mezzanine floor.

Obstetrics and Pediatrics—Lounge Room, sixteenth floor.

Eye, Ear, Nose and Throat—Main Private Dining Room, Mezzanine floor.

Urology and Dermatology—Room B (formerly called Men's Writing Room), Mezzanine floor.

GENERAL INFORMATION

The mornings of May 22nd and 23rd will be given up entirely to General Meetings, these meetings to be addressed by the guest speakers, from 10:00 A. M. to noon. It is very important that all in attendance should be prompt, as it is very

disconcerting to the speaker to have any disturbance after his address is begun.

Please note carefully the places of meeting of the Scientific Sections, as much disturbance can be avoided by going directly to the section which you have decided to attend.

Early registration of the members of the profession of Tulsa will be greatly appreciated, thereby facilitating the registration of out of town members.

The commercial exhibits will be held on the same floor as the registration, giving everyone an excellent opportunity to study this very important feature of the meeting.

Discussion of Papers—Men proposing to discuss papers in the Scientific Sections should speak slowly and distinctly in order that the reporter may be able to accurately report the discussion. Each discussor should clearly state his name and address before beginning his remarks, and as far as practicable it would be appreciated if the discussor would put in writing his remarks and hand to the reporter.

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GENERAL MEETING

Tuesday, May 22nd

8:00 P. M.

Crystal Ball Room, sixteenth floor, Mayo Hotel, Dr. A. W. Pigford, General Chairman, presiding.

Invocation—Rev. C. C. Grimes, pastor of Boston Avenue Methodist Church, South.

Violin Solo—Mrs. G. Garabedian.

Introduction of Guests—Dr. A. W. Pigford.

Address of Welcome on behalf of the City of Tulsa—Dr. T. A. Penny, Mayor.

Address of Welcome on behalf of the Tulsa County Medical Society—Dr. Ned R. Smith, president.

Response—Dr. T. H. McCarley, McAlester, retiring president.

President's Address—Dr. LeRoy Long, Oklahoma City.

9:00 P. M.

President's reception and dance, Crystal Ball Room.

GOLF

MONDAY, MAY 21

Annual Tournament, Tulsa Country Club, starting at noon. All green fees paid. A dinner and entertainment will follow at the club house, \$1.50 per plate.

TUESDAY, MAY 22

All members of the State Medical Association may play at any of the following courses, green fees paid by person playing:

Tulsa Country Club.
Oakhurst Country Club.
Indian Hills Country Club.

Committee: Drs. James Stevenson; S. Murray and E. L. Cohenour. Prizes donated by the following individuals and firms of Tulsa:

Dr. W. Albert Cook
H. H. (Scotty) Taylor
Morningside Hospital
Medical Arts Building
Medical Arts Prescription Shop
Mayo Hotel Pharmacy
American Optical Company
Oakhurst Country Club Golf Shop
Oklahoma Hospital Sanitarium
Tulsa Country Club Golf Shop
Indian Hills Country Club Golf Shop
Roy Getman Drug Store
McFarlin Country Club
Martin Fleming Company
Medical Arts Florists
Renbergs
Forsythe Surgical Supplies
Phillips Produce Company
Walk-Over Boot Shop
Public Service Company
Robert McBirney Company
Palace Clothiers
Bob Evans Pharmacy
Clark's Good Clothes
Jenkins Music Company
Flower Hospital
Haynes Auto Supply
Bliss Hotel Pharmacy
Bardon's Sporting Goods
Tribune Newsboy
Riggs Optical Company
Lincoln Drug Store
Central Drug Store
O'Hara's Barber Shop
Bishop's Waffle House

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MEDICAL RESERVE OFFICERS

Medical Reserve Officers dinner will be in the Mayo Hotel at 6:00 P. M., May 22. (Tickets \$1.00 each will be on sale at Registration desk. Please buy your tickets when you register as it is necessary to know in advance how many will attend).

Col. Charles F. Craig, U. S. Army M.C.,

retired, will be the guest of honor. All Reserve Officers should make a special effort to attend this dinner.

P. P. NESBITT, Chairman,
Committee on Medical Reserve Corps
Dinner.

WOMAN'S AUXILIARY

Register on the Mezzanine floor, Mayo Hotel.

MONDAY, MAY 21

(Morning)

10:00 State Executive Board Meeting,
Mezzanine floor.

(Afternoon)

1:00 Executive Board luncheon, University Club.

2:00 Motorcade over city.

6:00 Informal dinner and fashion show,
Junior League Tea Room.

TUESDAY, MAY 22

(Morning)

10:30 Annual Meeting, Junior Ball Room,
Mayo Hotel.

(Afternoon)

1:00 Luncheon, Oakhurst Country Club.

3:30 Post Board Meeting.

(Evening)

9:00 Program and dance; hosts—Tulsa
County Medical Society, Mayo Hotel.

OKLAHOMA PEDIATRIC SOCIETY

MONDAY, MAY 21

Clinical Conference will be held in the Solarium, Sixth Floor, Morningside Hospital, from 9:30 A. M. to 12:00 noon. Dr. C. E. Bradley, Tulsa, will be in charge of this program.

(2:00 P. M.)

Blood Dyscrasias in Children—LAVERNE HAYES, Tulsa.

The Relation of So-called Birth Injury to Cerebral Palsy—BEN H. NICHOLSON, Oklahoma City.

Some Conditions in Children Associated With Hypoglycemia—W. MARRIOTT McKIM, St. Louis, Mo.

Convulsions in Infants—G. R. RUSSELL, Tulsa.

Investigating a Case of Persistent Pyuria—MARY TOWNSEND DEMOTTE, Ponca City.

Some Puzzling Abdominal Conditions in Children—GEORGE ORMISTON, St. Louis, Mo.

Tuberculosis—C. V. RICE, Muskogee.

A dinner for Dr. Marriott and Dr. George Ormiston, one of the staff of the Washington University Medical School, at the Mayo Hotel, at 6:30 P. M. Registration for this dinner will be made at the hotel.

SECTION ON GENERAL SURGERY

Crystal Ball Room-Sixteenth Floor

Chairman—JOHN F. KUHN, Oklahoma City.

Vice-Chairman—WADE SISLER, Tulsa.

Secretary—E. EUGENE RICE, Shawnee.

TUESDAY, MAY 22

(Afternoon)

1:30 *Chairman's Address*—DR. JOHN F. KUHN, Oklahoma City.

1:50 *The Treatment of Cranio-Cerebral Injuries*—DR. LOYAL DAVIS, Professor of Surgery, Northwestern University Medical School, Chicago, Ill.

2:35 *Cholecystelectrocoagulectomy Without Drainage*—DR. MAX THOREK, Professor of Clinical Surgery, Cook County Graduate School of Medicine, Chicago, Ill.

3:20 *Infections of the Hand*—DR. F. L. FLACK, Tulsa. (Discussion opened by DR. A. FOWLER, Seminole.)

3:40 *The Punch Method of Transurethral Prostatectomy*—DR. F. CLINTON GALLAHER, Shawnee. (Discussion opened by DR. W. J. WALLACE, Oklahoma City.)

4:00 *Septicemia*—DR. L. J. STARRY, Oklahoma City. (Discussion opened by DR. FRED CRONK, Tulsa.)

4:20 *Phytobezoar or Persimmon Balls Occuring Around Tulsa, Okla.*—DR.

H. D. MURDOCK, Tulsa. (Discussion opened by DR. LEROY LONG, Oklahoma City.)

4:40 *Vaginal Hysterectomy*—DR. WENDELL LONG, Oklahoma City. (Discussion opened by DR. JOHN F. KUHN, Oklahoma City.)

5:00 *Tumors of The Breast*—DR. G. H. NIEMANN, Ponca City. (Discussion opened by DR. FRED GLASS, Tulsa).

WEDNESDAY, MAY 23

(Afternoon)

1:30 *Thoracoplasty*—DR. C. A. THOMAS, Tucson, Ariz. (Discussion opened by DR. HORACE REED, Oklahoma City.)

2:00 *The Closure of Adherent Tuberculous Cavities by Combined Artificial Pneumothorax and Phrenectomy*—DR. DAVID W. GILICK, Shawnee. (Discussion opened by DR. G. S. BAXTER, Shawnee.)

2:20 *Bacteriophage in Peritonitis*—DR. RAYMOND D. JACOBS, Enid. (Discussion opened by DR. CARL HOTZ, Tulsa.)

2:40 *Pneumoperitoneum As a Practical Procedure in Gynecology*—DR. ALFRED H. SUGG, Ada. (Discussion opened by DR. J. M. BYRUM, Shawnee.)

3:00 *The Surgical Abdomen in Everyday Practice*—DR. FRANK H. MCGREGOR, Mangum. (Discussion opened by DR. PAT FITE, Muskogee.)

3:20 *Headaches, Backaches, Their Relations to Pelvic Disorders and Their Treatment*—DR. LEALON E. LAMB, Clinton. (Discussion opened by DR. HORTON E. HUGHES, Shawnee.)

3:40 *Spinal Anaesthesia*—DR. ROSCOE WALKER, Pawhuska. (Discussion opened by DR. PIERRE N. CHARBONNET, Tulsa.)

4:00 *Ano-rectal Fistula*—DR. RAYMOND L. MURDOCK, Oklahoma City. (Discussion opened by DR. V. K. ALLEN, Tulsa.)

4:20 *Skin Grafting*—DR. JOHN F. BURTON, Oklahoma City. (Discussion

opened by DR. GEO. KIMBALL, Oklahoma City.)

4:40 *Acute Pelvic Infections*—DR. HOMER C. MANNING, Cushing. (Discussion opened by DR. J. M. BYRUM, Shawnee.)

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SECTION ON INTERNAL MEDICINE

Junior Ball Room—Mezzanine Floor

TUESDAY, MAY 22.

Chairman—E. RANKIN DENNY, Tulsa.

Vice-Chairman—PHIL M. MCNEILL, Oklahoma City.

Secretary—BERT F. KELTZ, Oklahoma City.

1:30 *Chairman's Address*—E. RANKIN DENNY, Tulsa.

1:50 *Clinical, Pathological and Experimental Studies in Water Intoxication*—FERDINAND C. HELWIG, Kansas City, Mo.; C. B. SCHUTZ and DWIGHT E. CLERRY, Kansas City, Mo.

2:30 *Parathyroidism*—ALPHONSE MCMAHON, St. Louis, Mo.

3:00 *Anterior Lobe of the Pituitary Gland*—P. A. STALY, Ponca City. (Discussion, F. G. DORWART, Muskogee.)

3:30 *Convulsive States Associated With Endocrine Disorders*—HENRY H. TURNER, Oklahoma City (Discussion, HARRY WILKINS, Oklahoma City.)

4:00 *Allergy in Relation to General Medicine*—ALLEN OLSON, Wichita, Kansas.

4:30 *Management of Pulmonary Tuberculosis*—C. A. THOMAS, Tucson, Arizona.

WEDNESDAY, MAY 23

1:30 *The Modern Conception of Acute Intestinal Obstruction*—HAROLD M. TRUSLER, Indianapolis, Ind.

2:00 *Preventive Aspects of Mental Hygiene*—PAUL A. DRAPER, Pueblo, Colorado.

2:30 *The Use of Dilaudid in General*

Practice—CLIFFORD M. BASSETT, Cushing.

2:50 *Cardiac Pain*—W. W. RUCKS, JR., Oklahoma City.

3:10 *Circulatory Disturbances of the Nervous System*—C. J. FISHMAN, Oklahoma City.

3:30 *Blood Complement in Health and Disease*—E. RANKIN DENNY, Tulsa.

3:50 *The Neuraesthetic Patient*—S. C. SHEPARD, Tulsa.

4:10 *The Neuraesthetic Patient*—FRANK J. NELSON, Tulsa.

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SECTION ON EYE, EAR, NOSE AND THROAT

Main Private Dining Room, Mezzanine Floor.

TUESDAY, MAY 22

Chairman—A. S. PIPER, Enid.

Vice-Chairman—P. F. HEROD, El Reno.

Secretary—L. C. MCHENRY, Oklahoma City.

Chairman's Address—

Fuso-Spirochetal Disease—A. S. PIPER, Enid.

Diathermy in Laryngology—MARVIN D. HENLEY, Tulsa. (Discussion, W. L. BONHAM, Oklahoma City; H. P. PRICE, Tulsa.)

The Relation Between Certain Eye Lesions and the Nasal Sinuses—V. V. WOOD, St. Louis, Mo. (Discussion, LEO F. CAILEY, Oklahoma City; E. S. FERGUSON, Oklahoma City.)

Multiple Cautery Puncture for Ectropion and Entropion—F. R. VIEREGG, Clinton. (Discussion, C. B. BARKER, Guthrie; H. F. VANDEVER, Enid.)

Benign Tumors of the Sinuses With Review of Literature—ARTHUR H. DAVIS, Tulsa. (Discussion, H. COULTER TODD, Oklahoma City; C. M. FULLENWIDER, Muskogee.)

Indications for Cataract Removal—F. M. COOPER, Oklahoma City. (Discussion, A. W. ROTH, Tulsa; H. S. BROWNE, Ponca City.)

Blue Sclera—L. C. KUYRKENDALL, McAlester. (Discussion, C. H. HARALSON, Tulsa; A. C. MCFARLING, Shawnee.)

Laryngeal Stroboscopy—LYLE S. POWELL, Lawrence, Kansas. (Discussion, RURIC N. SMITH, Tulsa; J. C. MACDONALD, Oklahoma City.)

The Cinch Shortening Method for Extraocular Muscles—HARVEY O. RANDEL, Okmulgee. (Discussion, J. M. STOOKSBURY, Shawnee; L. M. WESTFALL, Oklahoma City.)

Role of the Eustachian Tubes in Health and Disease—W. O. SMITH, Tulsa. (Discussion, A. E. HALE, Alva; D. W. MILLER, Blackwell.)

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SECTION ON OBSTETRICS AND PEDIATRICS

Lounge Room—Sixteenth Floor

TUESDAY, MAY 22

Chairman—CARROLL M. POUNDERS, Oklahoma City.

Vice-Chairman—H. J. EVANS, Tulsa.

Secretary—J. B. ESKRIDGE, Oklahoma City.

Chairman's Address—

Pediatrics of the Future—CARROLL M. POUNDERS, Oklahoma City.

Nephritis in Children—F. S. ETTER, Bartlesville. (Discussion, C. V. RICE, Muskogee.)

Treatment of the Infant—W. MCKIM MARROTT, St. Louis.

Allergy in Infancy—FANNY LOU BRITAIN LENEY, Oklahoma City.

The Asthmatic Child—RALPH BOWEN, Oklahoma City. (Discussion, HUGH C. GRAHAM, Tulsa; C. W. ARRENDELL, Ponca City.)

Diagnosis and Treatment of LaGrippe in Children—J. L. LEHEW, Guthrie. (Discussion, W. M. TAYLOR, Oklahoma City.)

The Use of Diphtheria Toxoid (Alum Precipitate)—C. E. BRADLEY, Tulsa. (Discussion, CHAS. E. WHITE, Muskogee.)

WEDNESDAY, MAY 23

The Mechanism of Labor—GEO. R. OSBORN, Tulsa. (Discussion, W. W. WELLS, Oklahoma City.)

Chorion Epithelioma—J. F. KUHN, Oklahoma City. (Discussion, GRIDER PENICK, Oklahoma City.)

Indications and Contra-indications for Caesarean Section—J. E. KANATSER, Wichita Falls, Texas.

The Nervous and Mental Side of Obstetrics—M. B. GLISMANN, Okmulgee. (Discussion, W. A. DEAN, Tulsa.)

Vaginal Infection With Trichomonas Vaginalis—ROY E. EMANUEL, Chickasha. (Discussion, E. P. ALLEN, Oklahoma City.)

Postpartum Care of the Breasts—CHAS. E. WHITE, Muskogee. (Discussion, FLOYD GRAY, Oklahoma City.)

SECTION ON UROLOGY, SYPHIL- OLOGY AND DERMATOLOGY

Room B—Mezzanine Floor

TUESDAY, MAY 22

Chairman—S. D. NEELY, Muskogee.

Vice-Chairman—S. F. WILDMAN, Oklahoma City.

Secretary—M. O. NELSON, Tulsa.

Chairman's Address—SHADE D. NEELY, Muskogee.

The Treatment of Bacillary Infections of the Urinary Tract—ANSON L. CLARK, Oklahoma City.

The Urologic Diagnosis of Tumors of the Right Upper Quadrant—DAVID V. HUDSON, Tulsa.

The Clinical Course of Ureteral Anomalies—D. W. BRANHAM, Oklahoma City.

Non-Surgical Consideration of Prostatic Enlargement—S. F. WILDMAN, Oklahoma City.

WEDNESDAY, MAY 23

The Treatment of Early Syphilis—CARL L. BRUNDAGE, Oklahoma City.

Vesicular Eruptions of the Hands and Feet—W. A. SHOWMAN, Tulsa.

The Management of Varicose Eczema and Ulcers—WM. E. EASTLAND, Oklahoma City.

A Generalized Skin Eruption With Gastrointestinal Involvement Due to Two Different Species of Fungi—O. G. HAZEL and JOHN H. LAMB, Oklahoma City.

EXHIBITORS

General Electric X-Ray Corporation.

Pearson School, Inc.

First Texas Chemical Manufacturing Company.

Caviness Surgical Company.

Mead Johnson & Company.

H. G. Fischer & Company.

Gerber Products Company.

Goetze-Niemer Company.

The Dick X-Ray Company.

Grant G. Forsythe, Inc.

COMMITTEE REPORTS

These reports are made in compliance with provisions of the Constitution and By-Laws which call for publication of such matter in the issue of the Journal preceding the Annual Session.

REPORT OF THE COMMITTEE ON CONSERVATION OF HEARING.

In the work for conservation of hearing among school children conducted by the American Federation of Organizations for the Hard of Hearing, there was made the astounding discovery that at least 3,000,000 of these children were victims of some hearing defect. It would seem to require no argument to show that our efforts applied first, to the discovery of these hearing defects through hearing tests, then the further otological examination and treatment both medical and surgical, the adoption of lip reading in public schools, play with normal hearing school fellows, the intelligent application of vocational advice and counsel for these children and their parents, constitute the very highest type of individual and public health. No movement in modern times looking to the conservation of a vital function has been more marked than our particular work for the conservation of hearing in children. The Federation's campaign for encouraging the improvement of hearing aids, both individual and group sets, has brought untold blessings to thousands of hard of hearing people and enable them to enjoy conversation, music, drama, and the church with a result of maintaining more nearly normal their life's contacts. This activity is basically a health activity, if for no other reason than because it promotes hope and happiness, and courage to demand rights and privileges.

Another Federation achievement which may well afford us a profound satisfaction is the public education in aural hygiene, or the health of the hearing faculty, which we are promoting from coast to coast. Every time a Federation member broadcasts, hundreds more learn something about the importance of the hearing, about the physical enemies which threaten it and what to do in case of ear trouble. Printed matter put out by the Federation reaches the great general public at the same time that it reaches those whose hearing is defective. Every time a school survey is made, more teachers begin to think about hear-

ing, not only regarding their pupils, but also about their own hearing or that of friends or relatives; more parents become alive to the care and promotion of children's hearing. The great general public is slowly but surely becoming saturated with this highly valuable health teaching.

Another activity of the Federation is promoted under the heading "Exhibits". Our exhibits, whether conducted by the Federation or by its various leagues, are always accepted among the scientific health exhibits of medical organizations throughout our country, even including the scientific exhibit of the American Medical Association. The medical world, at least, looks upon these exhibits as health exhibits.

J. E. DAVIS, Chairman;
CHARLES M. FULLENWIDER,
L. C. McHENRY.

REPORT OF COMMITTEE ON CRIPPLED CHILDREN

The State program for the care of crippled children has continued in about the usual routine during the last year. There has been no particular occasion for the committee to make recommendations or suggestions.

There is still some criticism of the Oklahoma House Bill No. 170, particularly regarding the transferring of acute cases from distant points to the Children's Hospital in Oklahoma City. The committee believes that there are several provisions in the Kansas Law which should be considered in respect to possible amendment of the Oklahoma Law. The Kansas Law is similar to the Oklahoma Law except as follows:

The Oklahoma Law gives the county judge jurisdiction over indigent children and therefore the judge is the one who decides whether or not the case is a deserving indigent. The Kansas Law gives the probate judge jurisdiction, but the medical profession of Kansas was influential in revising the law, limiting the cases to orthopedic and plastic conditions. One of the objections expressed by a number of medical men regarding the Oklahoma Law, is that there is no such limitation. Another criticism is that the judge is not always aware of the financial status of the individual and patients who could pay part fees and are given charity service. In Kansas the law provides for a commission of five men appointed by the Governor for a term of five years each. This body, however, is non-political. In Oklahoma the work is centralized in a few hospitals, whereas in Kansas provision is made for centers throughout the entire State. A hospital rate is fixed by the commission, not to exceed \$21.00 per week, while in Oklahoma the limit paid to the hospital is \$15.00 per week and this includes professional services, braces and all hospital care. The Oklahoma Law specifically states that no fee shall be paid any surgeon or nurse, while the Kansas Law allows the surgeon to be paid a small fee fixed by the Kansas Commission for Crippled Children. These fees average from one-fourth to one-third of the regular surgical fees. The Oklahoma Law provides that the Oklahoma University School of Medicine prepare proper forms and approve hospitals and surgeons, whereas the Kansas Law leaves this to the Commission. The Oklahoma Law does not provide more than one general clinic for each congressional district. However, the Society for Crippled Children holds a great many clinics in various localities throughout the year. The doctors and nurses donate their services and the local clubs or individuals arrange for the clinics. In Kansas the clinics are held at the discretion of the com-

mission and the expense is prorated among the various counties participating in that particular clinic.

The Committee recommends that legislative preparation be made to revise the Oklahoma Law.

The Oklahoma Society for Crippled Children has 160 life members who have paid \$100.00 or more. The annual membership fee is \$2.00 and in 1933 there were 1,445 paid up memberships. In 1933, 18 clinics were held throughout the State, where 691 children were examined. There has been a total of 8,569 children examined since 1926 in 237 clinics. There are 11,493 cases on file in the office of the Secretary of the Society and 8,883 children have been hospitalized under House Bill 170.

The Executive Secretary of the Crippled Children's Society is Mr. Joe N. Hamilton, Franklin Building, Oklahoma City, and any physician wishing special information will find that office always ready to cooperate.

EARL D. McBRIDE, Chairman,
S. R. CUNNINGHAM,
WADE SISLER.

ANNUAL REPORT of the

Secretary-Treasurer-Editor

October 2, 1933, to April 30, 1934.

To Members of the Oklahoma State Medical Association:

In conformity with the Constitution and By-Laws, I hereby submit the report of various transactions during the past year.

Detailed statements of all activities, financial transactions, duplicate deposit certificates and other business matters have been submitted to the Council for their audit.

Membership: On April 30, 1933, we had 1447, and on this date we have 1464.

Deaths of Physicians: These will appear in the Report of the Committee on Necrology, published in the June Journal.

Medical Defense: The following cases have either been settled, dropped or disposed of:

Settled:

Tulsa County, No. 56051.

Pending:

Caddo County, No. 9407.

Canadian County, No. 9422.

Choctaw County, No. 6644.

Logan County, No. 7693.

Osage County, No.

In addition to the above, there are now pending the following cases, the progress and status of which is unknown, as they are pending or dormant in the courts:

Blaine County, No.

Carter County, No.

Carter County, No.

Craig County, No.

Garvin County, No.

Hughes County, No.

Payne County, No.

Journal and Advertising: It is always in order to call your attention and urge upon you that you patronize those who use the pages of the Journal for advertising purposes. Not only is this a reciprocal measure but we can only sell our advertising by

showing the advertisers that they receive profitable returns for the money invested.

The Journal, through the past year, has maintained its usual size in spite of the fact that there has been some decrease in income from advertising. We have thought it advisable in some issues to cut down the amount of editorial material when there are some special features that demand the space. I want to particularly thank the doctors who have furnished us with abstract material, as I know this takes a great deal of time and requires considerable reading. The material that has been abstracted has been of the highest quality and has been of inestimable benefit to the subscribers of the Journal.

FINANCIAL STATEMENT

CASH RECEIPTS AND DISBURSEMENTS

Oklahoma State Medical Association, May 1, 1933,
to October 2, 1933. Dr. C. A. Thompson,
Secretary-Treasurer.

General Fund

Balance May 1, 1933 \$3,433.86

Receipts

Notes Payable (borrowed money) 2,000.00
Advertising 1,304.54
Membership 220.00

Total Receipts \$3,524.54

Total Cash to Account for... \$6,958.40

Disbursements

Claude A. Thompson, Salary—five months
at \$200.00 \$1,000.00
Advances 199.54
Oltha Shelton, Salary—five months at
\$125.00 625.00
Advances 369.75
Printing of Journal 1,732.00
Expense Annual Meeting 705.65
Council and Delegate Expense 491.60
Postage 132.84
Printing, Stationery and Office Supplies 118.89
Rent 150.00
Treasurer's Bond and Audit 135.00
Telephone and Telegraph 39.71
Press Clipping Bureau Services 22.00
Interest on Borrowed Money 46.50
Extra Office Salaries 10.40
U. S. Check Tax 1.76
Miscellaneous Expense 9.48

Total Disbursements \$5,790.12

Balance on hand October 2, 1933. \$1,168.28

Medical Defense Fund:

Balance May 1, 1933 \$ 42.67

Receipts

None

Total Cash to Account for \$ 42.67

Disbursements

Balance October 2, 1933 \$ 42.67

The above statement taken from the Audit of
Charles A. Wright, Certified Public Accountant, Mus-
kogee, Oklahoma.

FIRST NATIONAL BANK

McAlester, Okla., April 30, 1934.

Dr. L. S. Willour, Secretary-Treasurer,
Oklahoma State Medical Association,
McAlester, Oklahoma.

Dear Dr. Willour:

This is to certify that according to our records,
the following accounts had a credit balance, subject
to check, at the close of business April 30, 1934, as
follows:

Oklahoma State Medical Association

General Fund \$1,806.82
Medical Defense Fund 1,542.11
Post Graduate Fund 47.58

Yours very truly,

J. K. PEMBERTON,
Vice-President and Cashier,
The First National Bank.

AUDITOR'S REPORT

April 30, 1934.

Dr. T. H. McCarley, President,
Oklahoma State Medical Association,
McAlester, Oklahoma.

Dear Doctor McCarley:

At your request I have audited the books of ac-
count, records and investments of Dr. L. S. Willour,
Secretary-Treasurer, Oklahoma State Medical Asso-
ciation, McAlester, Oklahoma, for the period begin-
ning October 3rd, 1933, and ending April 30th, 1934,
and present herewith the following schedules, to-
gether with the comments and supporting exhibits.

Cash receipts were traced to the bank through a
detailed checking of items received against deposit
tickets as shown on file in the bank. Cash expendi-
tures and disbursements were checked against the
bank's records, all vouchers and checks were exam-
ined and compared with the original entries, en-
dorsements scrutinized and found to be in order.

Two checks, numbers 3517 for \$4.00, 3574 for
\$1.00, totaling \$5.00, drawn on the Commercial Na-
tional Bank, Muskogee, Oklahoma, by the former
Secretary-Treasurer, were found to be still outstand-
ing. Instructions which were verified by me have
been given to the Commercial National Bank, Mus-
kogee, Oklahoma, that when and if these checks are
presented that they be forwarded to the First Na-
tional Bank at McAlester, Oklahoma, for payment.
I have therefore considered these checks in a recon-
cilement of the account at the First National Bank,
McAlester, Oklahoma, as a proper liability.

Under date of October 2, 1933, all bank accounts
of the Oklahoma State Medical Association were
carried at the Commercial National Bank, Muskogee,
Oklahoma, and were subsequently transferred to the
First National Bank, McAlester, Oklahoma, where
the accounts are now carried.

All accounts at the Commercial National Bank,
Muskogee, Oklahoma, have been properly closed.

I find that at the time Dr. Willour took over the
affairs of the Association that there were two Notes
Payable outstanding to the Commercial National
Bank, Muskogee, Oklahoma, for \$1000.00 each, or a
total of \$2000.00, collateralized by a like amount of
Fourth 4¼ Liberty Loan Bonds. These notes were
due on January 15, 1934, and February 2, 1934, and

were paid promptly at their maturity, and the collateral properly released and returned to the Secretary-Treasurer. There was also an Account Payable item to the Hoffman-Speed Printing Company, Muskogee, Oklahoma, covering the printing of the September Journal, that I find to be paid in full by the present Secretary-Treasurer, the amount being \$410.52.

There was also taken over the following Accounts Receivable:

Dr. C. A. Thompson	\$199.54
Oltha Shelton	369.75

These amounts representing advances on subsequent salaries. The account of Dr. C. A. Thompson was disposed of in accordance with an order of the Council, instructing the Secretary-Treasurer to present Mrs. C. A. Thompson with this amount in appreciation of service rendered to the Association by Dr. Thompson. The account of Oltha Shelton has been paid in full.

In company with Dr. L. S. Willour, Secretary-Treasurer, I have examined the following investments which are kept in a safe-keeping deposit box in the First National Bank, McAlester, Oklahoma, said box being in the name of the Oklahoma State Medical Association:

General Fund:

Fourth 4¼ per cent Liberty Loan Bonds of 1933-38, Coupon form:

Number	Amount
G02629577	\$1000.00
A02629568	1000.00
B02629572	1000.00
C02629573	1000.00
D02629574	1000.00
F02629575	1000.00
F02629576	1000.00

Total Par Bonds	\$7000.00
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Medical Defense Fund:

U. S. Treasury Bonds of 1943-45, 4¼-3¼ per cent, Coupon form:

Number	Amount
878J	\$1000.00
879K	1000.00
880L	1000.00

Total Par Bonds	\$3000.00
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October 15, 1934, and all subsequent coupons were found to be attached to all of the above bonds in both accounts. I found that all coupons clipped from these bonds have been properly accounted for in their respective accounts.

The books are kept on an actual cash receipts and disbursements basis and for that reason three items accrued, but not yet due, have not been included in this audit. The accounts are:

Hoffman-Speed Printing Co	\$445.59
Dr. L. S. Willour, Sec'y-Treas., April salary	200.00
Oltha Shelton, Asst Sec'y, April salary	125.00

Upon investigation and consultation with the Secretary-Treasurer I am convinced that there are no bills or outstanding liabilities due, unpaid.

Under Cash Receipts and Disbursement schedule, General Fund, is an item advance—Post Graduate Extension Fund paid \$341.89, and under Cash Receipts and Disbursements, Post Graduate Extension Fund, is an item advance—by Oklahoma State Medi-

cal Association, \$218.00. The difference of \$123.89 between these two items was paid direct before the establishment of the Post Graduate Extension Fund account.

There is attached hereto and made a part of this report a schedule of Accounts Receivable, from advertising, due the Association as of April 30, 1934, totaling \$705.50, which are not included in this balance sheet of assets. As of October 2, 1933, Accounts Receivable from advertising were \$1512.50, whereas of April 30, 1934, as per the attached schedule, this amount has been reduced to \$705.50.

I hereby respectfully submit the foregoing audit and report for your information.

J. K. PEMBERTON,
Auditor.

BALANCE SHEET APRIL 30, 1934,

Oklahoma State Medical Association, Dr. L. S. Willour Secretary-Treasurer, McAlester, Oklahoma.

Assets

Current Assets:

First National Bank, McAlester, Oklahoma—	
General Fund	1,801.82
Medical Defense Fund	1,542.11
Investments—U. S. Government Bonds:	
General Fund (Par value)	\$7,000.00
Medical Defense Fund (Par value)	3,000.00
	10,000.00
	<u>\$13,343.93</u>

Liabilities

Excess of Assets Over Liabilities:	
Balance October 2, 1933	\$9,407.39
Less: Advance during prior period to Dr. C. A. Thompson—ordered donated to Mrs. C. A. Thompson	199.54
	\$9,207.85
Add: Excess of Income over Expenditures—	
General Fund	2,636.64
Medical Defense Fund	1,499.44
	4,136.08
	<u>13,343.93</u>

CASH RECEIPTS AND DISBURSEMENTS

October 3, 1933, to April 30, 1934, Oklahoma State Medical Association, Dr. L. S. Willour, Secretary-Treasurer, McAlester, Oklahoma.

General Fund:

Balance	\$1,168.28
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Receipts

Advertising	\$3,701.94
Membership	4,428.00
Interest Received on Government Bonds	297.50
	<u>\$8,427.44</u>
Total Receipts	\$8,427.44
Total Cash to Account for	<u>\$9,595.72</u>

Disbursements

Dr. L. S. Willour, salary, 5 23/30 months at \$200.00	\$1,155.28
Oltha Shelton, salary, 6 months at \$125.00	750.00
Xmas bonus	10.00
	<hr/>
	760.00
Less: Re-payment of advance during prior period	369.75
Extra Office Salaries	25.00
Printing Journal	3,145.90
Expense Annual Meeting	28.35
Council and Delegate Expense	192.90
Postage	133.16
Printing, Stationery, and Office Supplies	67.53
Rent	105.00
Treasurer's Bond and Audit	81.25
Telephone and Telegraph	59.49
Press Clipping Bureau Service	18.00
U. S. Check Tax	2.20
Miscellaneous Expense	47.70
Advance—Post Graduate Extension Fund	341.89
Notes Payable—Commercial National Bank, paid	2,000.00
	<hr/>
Total Disbursements	\$7,793.90
Balance on hand April 30, 1934	\$1,801.82
Medical Defense Fund:	
Balance October 2, 1933	\$ 42.67

Receipts

Dues Collected	\$1,472.00
Interest Received—Gov't Bonds	127.50
Transferred from General Fund	100.00
	<hr/>
Total Cash to Account for	\$1,742.17

Disbursements

Re-payment to General Fund	100.00
Medical Defense Ward & Clinton	100.00
U. S. Check Tax06
	<hr/>
Total Disbursements	200.06
Balance April 30, 1934	\$1,542.11

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POST GRADUATE EXTENSION FUND

Balance October 2, 1933	None
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Receipts

Fees—Univ. of Okla.	706.87
Fees Collected	119.25
Advance by Okla. Medical Ass'n	218.00
	<hr/>
Total Cash to Account for	1,044.12

Disbursements

Faculty	\$ 553.54
Salaries—Pryor Carson	300.00
Stationery and Printing	13.25
Refund on Course	11.25
Expenses of Pryor Carson	141.73
Refund—to Okla. Med. Ass'n	24.11
U. S. Check Tax24
	<hr/>
Total Disbursements	1,044.12
Balance on hand April 30, 1934	None

CASH ON DEPOSIT

April 30, 1934. Oklahoma State Medical Association,
Dr. L. S. Willour, Secretary-Treasurer,
McAlester, Oklahoma.

First National Bank, McAlester, Oklahoma:

General Fund:

Balance as per records

Add: Outstanding Checks:	Number	Amount	
	3715	4.00	
	3574	1.00	5.00

Balance as per Bank Statement and Verification Letter

NB: The above outstanding checks were issued drawn on the Commercial National Bank, and have been ordered changed to read First National Bank, McAlester, Oklahoma, when and if presented to the original drawee bank.

Medical Defense Fund:

Balance as per records

Add: Outstanding Checks

Balance as per Bank Statement and Verification Letter

Post Graduate Fund:

Balance as per records

Add: Outstanding Checks:	Number	Amount	
	13	47.58	47.58

Balance as per Bank Statement and Verification Letter

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INCOME AND EXPENDITURES

For Period October 2, 1933, to April 30, 1934. Oklahoma State Medical Association, Dr. L. S. Willour, Secretary-Treasurer, McAlester, Oklahoma.

General Fund:

Income

Advertising	\$3,701.94
Membership Dues	4,428.00
Interest Received—Gov't Bonds	297.50
Total Income	<hr/>
	8,427.44

Expenditures

Salaries:

Secretary	\$1,155.28
Ass't to Secretary	760.00
Extra Office Help	25.00
	<hr/>
	1,940.28

Printing of Journal

Less: September Account set up in prior period

Expense Annual Meeting

Council and Delegate Expense

Rent

Postage

Treasurer's Bond and Audit

Printing, Stationery and Office Supplies

Telephone and Telegraph

Press Clipping Bureau Service

U. S. Check Tax

Miscellaneous Expense

Advance—Post Graduate Extension Work—Net	341.89
Prepaid Interest (absorbed this period)	37.67
Total Expenditures	5,790.80
Excess of Income over Expenditures	2,636.64

Medical Defense Fund:

Income	
Dues	1,472.00
Income Received—Gov't Bonds. ...	127.50
Transferred from General Fund.....	100.00
Total Income	1,699.50
Expenditures	
Re-payment to General Fund	100.00
Defense—Clinton & Ward	100.00
U. S. Check Tax06
Total Expenditures	200.06
Excess of Income over Expenditures	1,499.44

The foregoing statement and audit is submitted as my report from October 2, 1933, to April 30, 1934.

L. S. WILLOUR,
Secretary-Treasurer-Editor.

DIVIDED DOSES OF TYPHOID VACCINE IN FEVER THERAPY OF NEUROSYPHILIS

J. R. Driver and Henry C. Shaw, Cleveland (Journal A. M. A., Dec. 23, 1933), administered intravenously fresh commercial typhoid vaccine, containing 1,000,000,000 organisms per cubic centimeter, in the treatment of nineteen patients who were suffering from various types of neurosyphilis and two from resistant syphilis associated with interstitial keratitis and iritis. To 1 cc. of the vaccine they added 9 cc. of physiologic solution of sodium chloride. The diluted vaccine is kept in an icebox and can be used throughout the course of treatment. Treatment is given on alternate days. It can be given on successive days if the temperature has returned to normal, if the reactions are well sustained and if there are no other contraindications. Temperatures are taken rectally every half hour until the temperature has risen to 104 F. and then every fifteen minutes until it falls to 104 F. again. Thereafter, the temperature is recorded hourly until normal. The use of antipyretics during the course of the treatment may greatly diminish the fever reactions. The first dose is given preferably in the morning. Within from thirty minutes to two hours the patient usually experiences a chill lasting for a few minutes and followed by a rise in temperature. The second dose is then given after the rise is well established, i. e., 100 F. or higher. The interval between doses should be not less than two hours. From three to six hours is equally satisfactory provided the temperature has not dropped to near normal by this time. In many instances the fastigium lasts for only a few minutes, so that unless the temperatures are taken frequently the peak cannot be recorded. A course of treatment may consist of any number of injections—as many

as from ten to sixteen have been given. Subsequent courses may be given with equally satisfactory results after an interval of weeks or months. The authors state that the divided dose method is an excellent substitute for malaria treatment and brings satisfactory fever therapy within the reach of a still larger group of patients suffering from neurosyphilis. Several courses of treatment can be given without the establishment of a permanent immunity, and chemotherapy can be combined with it if desired. The higher temperatures made possible by this method clearly demonstrate the advantage to be gained over the older methods of producing fever by the injection of typhoid vaccine.

SKELETAL TRACTION IN TREATMENT OF FRACTURES OF SHAFT OF TIBIA AND FIBULA

In fractures of the shaft of the tibia and the fibula, W. K. West, Oklahoma City (Journal A. M. A., Dec. 23, 1933), has used the Kirschner wire technique in the following manner: 1. In cases in which weight traction is used in conjunction with the Braun frame, as described by Boehler, the Kirschner wire is introduced through the middle of the os calcis; for example, cases coming in several days after injury; also spiral or badly comminuted fractures. 2. In cases in which the wire is introduced through the os calcis and reduction carried out immediately, followed by the use of the long leg plaster bandage with the knee flexed. The wire and bow are incorporated in the cast. These cases are usually those in which the fractures are low in the tibia and fibula. A spinal or general anesthetic is used when a manual reduction is done at the time the wire is introduced. 3. In cases in which the fracture is in the middle or upper third. Two wires are placed, one just below the knee and the other just above the ankle. A cast is applied to the fracture site above and below; then, with traction applied, the two casts are united by connecting plaster.

GESTATIONAL POLYNEURITIS

According to E. D. Plass, Iowa City, and W. F. Mengert, Philadelphia (Journal A. M. A., Dec. 23, 1933), gestational polyneuritis commonly follows or develops concurrently with hyperemesis gravidarum. There is a tendency to explain the symptoms on the basis of hysteria unless a neurologic examination is made, since there are usually no evidences of visceral disease. The cardinal observations include: (1) general weakness, more marked in the legs and in the exterior muscles; (2) sensory disturbances; (3) tachycardia for which no organic explanation can be elicited; (4) marked diminution or absence of the various tendon reflexes, and (5) a psychosis of the Korsakoff type. The etiology is unknown, but the disease is variously explained as due to a toxin developed by the conceptus or to a deficiency in vitamin B intake. Pathologic changes in the viscera are scarcely significant, but degenerative changes in the peripheral nerves and spinal cord and petechial hemorrhages in the cerebrum offer an explanation for the neurologic manifestations. The prognosis is poor. If the patient survives the first two weeks, slow recovery usually ensues, but it may never be complete. Treatment is empirical and none too successful. Prophylaxis on the basis of high vitamin feeding offers the best hope for improving treatment. Therapeutic abortion is well advised but the results are frequently disappointing.

ABSTRACTS « REVIEWS « COMMENTS AND CORRESPONDENCE

EYE, EAR, NOSE and THROAT

Edited by Marvin D. Henley, M.D.
911 Medical Arts Bldg., Tulsa

Eye Pad for Making Hot Applications. John N. Evans, M. D., Brooklyn. *Archives of Ophthalmology*, February, 1934.

Investigation among ophthalmologists from various localities brought out the fact that in the treatment of eyes the usual method of hot applications, i. e., hot water with cotton pledgets or the electric pad has proven unsatisfactory.

After making a number of bakelite and hard rubber patterns and trying them on fifty patients a pad was obtained which met practically all the requirements. The general shape is triangular with rounded corners, is applicable to either eye with very little pressure and yet is close to the orbital rim. With this as a pattern a rubber bag was made, which contains the heating element and the surface of application is formed of a metal plate, which is bound by a heavy fabric. The "thermic mixture" is permanently sealed in the pad and if by accident any of the mixture escapes it is non-corrosive and is only slightly irritating when tested on rabbits' eyes. Twenty-four pads were placed, as an experiment, in the Brooklyn Eye and Ear Hospital and met with general approval. Each pad was used approximately six hundred hours.

Pictures and detailed diagrams are given showing the results of many experiments. Although not perfected it has many advantages over the old methods. Evans says in his notes that "this contribution is primarily intended as a report on what appears to be a practical instrument, but only so far as its physical characteristics are concerned."

Recent Advances in the Physiology of Hearing. W. J. McNally, M. D., Montreal. *Archives of Otolaryngology*, February, 1934.

Do fish hear? The history of this question is ably reviewed and the technique given of experiments performed by various men who conclude that the average fish can differentiate tones within an octave of each other. A few can make much finer distinctions, however none of the fish have been able to differentiate between the intensities of the same tone and as a rule the memory for these tones is good. If it is a fact that some fish (catfish) do make noises it follows that they must have a mechanism for perceiving sound. Sections of the labyrinth show this to be true. Ablation operations were performed on the labyrinth of the *Phoxinus laevis* or common minnow to determine what part had to do with receiving the sound stimuli. If the utricle and canals were removed it was found that the equilibrium was disturbed but that the sound perception was not impaired. If the otolith was removed from the sacculus and lagena there was no vestibular disturbance but response to higher tones was lost. The inference deduced was that the sacculus and lagena had

to do with the reception of the sound vibrations. Experiments on fish, frogs and rabbits demonstrate that the sacculus has no vestibular functions. The sacculus in pigeons may have to do with compensatory rotatory movements of the eyes.

In man there are two most common theories in regard to hearing, the Telephone Theory and the Resonance Theory. The Resonance Theory is the more generally accepted of the two. When a sound wave is received by the ear a sector of the basilar membrane corresponding to the frequency of vibration of the sound is set in sympathetic vibration and the simple nerve impulses are sent to the brain. Ablation experiments were carried out on a dog's cortex in an attempt to arrive at some idea of the location of an auditory center. These seemed to show that the anterior part of the temporal lobe is chiefly concerned with the high tones but that other parts of the cortex, by practice, acquire the ability to also interpret these tones. It would seem that the nucleus of the acoustic analyzer is situated in the temporal lobe. Bone conduction tests should be carried out in a silence room to eliminate the noise that has a varying effect and then they really become a cochlear function test rather than a test for the function of the middle ear. The absolute bone conduction test or the silence test of Schwabach is the most accurate and important since it gives the amount of cochlear impairment. It was formerly supposed that disease of the middle ear produced a greater loss of hearing for the lower tones but later tests with the audiometer and monochord on about eighty children who were patients in the Johns Hopkins Hospital showed that suppuration of the middle ear caused a loss of hearing by air conduction of the higher tones rather than the lower ones. In closing a metabolism test of some kind is suggested to detect beginning otosclerosis since our common tests of hearing are ineffective and impaired hearing may be a late manifestation of the disease.

Surgery and Dietetic Treatment In Its Relation To Nasal Pathology. Dr. E. V. Ullmann, Portland, Oregon. *The Laryngoscope*, February, 1934.

Among Ullmann's contributions to the literature is his recent book entitled "Diet in Sinus Infection and Colds." A dietetic regime is not advocated as a cure-all for every sinus infection but when intelligently used in the proper balance will give more satisfactory results to both the physician and the patient than surgery in a certain type of cases. In the previous literature there is no clear classification of the nasal pathology for medical and surgical treatment. This differentiation is emphasized in this monograph. In hypertrophic rhinitis complications involving the eye and the brain, acute empyema of two or more sinuses and every unilocular sinus suppuration surgery must be a primary consideration if the patient is to be cured. Those conditions mentioned in which medical treatment is primary are: pansinusitis chronica suppurativa, rhinopharyngitis chronica, congestive rhinitis with headache, vasomotor rhinitis, recurrent coryza and dry deafness in its various forms as far as influenced by nasal irritations. Congestive rhinitis with headache is probably that

which has in other publications been referred to as Sluder's syndrome. The most favorable results in the medicinal (diet) treatment are obtained in the patient with recurrent coryza. Allergic polyps and ozena are placed midway in the position between primary medical and primary surgical treatment because each of these cases must be studied and method of treatment individually decided. Whether surgery is resorted to or not it has been found that a proper diet is beneficial in every such case. The type of patient mentioned as suitable for primary medicinal treatment usually shows a tendency to headache, constipation, heart-burn, free perspiration with an offensive odor, bad breath, inclination to irritations of the skin and a highly acid urine. A base forming diet with restriction of starches and meat and an increase of lacto-vegetable food with detailed instructions for the correct way of preparing vegetables without the loss of the minerals will correct the acidotic tendency. The calcium deficiency of the average American diet is the next important consideration. Since 1911 various authorities have called attention to this fact from time to time. One man reports that of 4,000 unselected cases in New York hospitals a careful check showed that only two patients had had a normal calcium intake. European research shows a definite relation in the retention, assimilation and elimination of calcium to that of magnesium, potassium and more especially that of sodium. On a number of normal and sick people of the post-war period in Europe experiments were carried out which consisted of examination of their feces and urine to determine the amount of calcium and magnesium eliminated with their ordinary diet; then the sodium chloride was increased in their daily diet from 5 gms. to 30 gms. It was found that an increase of the sodium atom in the diet increased the amount of calcium eliminated. The conclusion drawn is that the assimilation of calcium is greatly handicapped if large amounts of sodium are taken and that no application of calcium can be expected to be successful, whether given internally, intramuscularly or intravenously, unless the mineral metabolism, particularly that of the sodium chloride, is closely watched. Six cases are reported of patients, ages six to sixty-eight, which show the characteristic influence of dietetic treatment.

Erysipelas and the Haemolytic Streptococcus in Relation To Otolaryngology. Dan McKenzie, London. The Journal of Laryngology and Otolaryngology, February, 1934.

Is all well with our aseptic methods is the question asked by the writer. During five years in the Central London Throat and Ear Hospital there were twenty-eight cases of erysipelas, twenty-seven of which were post-operative. The infection followed a mastoid operation in nineteen cases, a Caldwell-Luc in three cases and one each in a frontal sinus, a cervical adenitis, an epithelioma of the soft palate, a tonsillectomy with post-nasal curettage and an epithelioma of the maxillary antrum. Common erysipelas is usually found in the area of the head and the above data shows that this post-operative complication occurs with greatest frequency following mastoid operations. Erysipelas is commonly spread by direct or indirect contact but isolated cases are found which must be attributed to an autogenous origin. The offending organism is streptococcus haemolyticus which appears to have a special facility in adapting the refinements of its living chemistry to the particular host in which it finds itself. An illustrative instance is cited in which the father of a family had erysipelas of the face at the same time his daughter had septic tonsillitis and his wife a short time later

developed a throat infection with subsequent rheumatism and toxic psychosis.

Some authorities believe that the toxigenicity of the germ is increased as it passes from person to person until it reaches the erythrogenic phase and then an acute attack of scarlet fever or erysipelas is precipitated. This theory would account for the so-called "surgical" scarlet fever which appears apparently without any reaction. Erysipelas when found in the ward of a hospital is now considered to originate from another case of erysipelas, from a streptococcal infection (not erysipelas) in another person or from a streptococcal infection (not erysipelas) in the patient himself. The question raised is whether the latent streptococci present in the patient become a virulent infection due to some change of chemistry in the patient or are they stimulated to activity by the virulent streptococci from another patient or are the normally present streptococci replaced by a more virulent type or strain of the organism. Acute otitis media, acute nasal infections and acute pharyngotonsillitis are the forerunners of most the erysipelas and scarlet fever relative to otolaryngology. Omitting infancy and old age the mortality of erysipelas is about five per cent. Erysipelas following surgery is more hazardous than the spontaneous variety and a clean operative wound (incision) is more susceptible to this type of infection than one which is already putrefying. Erysipelatous meningitis is rare, only nine cases having been recorded. A streptococcal tonsillitis within ten days following a submucous resection is indicative of an infected nasal wound. Treatment for erysipelas is 20 cc. of anti-streptococcal (scarlet) serum daily for three or four days. The intravenous route has no advantages and blood transfusion is not recommended.

To find a means of preventing the spread of this infectious disease is obviously a duty of the otolaryngologist since the habitat of the streptococcus haemolyticus is most frequently the ear, nose and throat. The organism normally found in the throat is non-pathogenic; the greatest peril arises from the exogenous streptococcus. The average hospital of today is above criticism in the operating room routine but there is room for improvement in the disposition of the patient after he leaves surgery. Sore throats in all employees, nurses and staff members should be promptly reported and receive due consideration.

The author advocates as small an incision as possible in mastoid infections which are very virulent in order to attempt to protect the clean tissues through which the opening is made and to lessen the pyrexia and toxemia of the first week, post-operative, as much as possible. He compares this to the procedure followed in an operative frontal sinus which is limited to simple drainage in the acute stage. In mastoid operations in scarlet fever the infection of the healthy tissues is much more frequent and severe than the ordinary cases of mastoiditis. Three types of mastoid infections are mentioned, the first two of which should receive special care in limiting the spread of infection: (1) scarlet fever, in which wound-infection is nearly always severe and prolonged; (2) fulminating non-scarlet fever, in which high temperature and severe pain precede the opening of the tympanic membrane and wound-infection tends to be of the erysipelas type and (3) mild non-scarlet fever, in which wound-infection is generally but not invariably, trifling. This is an original manuscript and contains the results of much detailed observation.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D.
717 North Robinson Street, Oklahoma City.

Osteomyelitis des Tibia und des Kniegelenk. (Osteomyelitis of Tibia; Involving Knee Joint.) Dr. Kurt L. Muller. *Wiener Klinische Wochenschrift*. January 26, 1934.

Sixteen cases of Osteomyelitis (Brodies abscess type) proximal to the knee joint are reviewed. One-third gave a history of trauma, two-thirds had involvement of the knee joint with 20 per cent mortality. The author points out that when the condition is acute, if it occurs before the fusion of the epiphysis, a long latent inactive period ensues. This period diminishes as the epiphysis approaches the state of fusion. The author concludes that even though there is free vascular communication between the cartilagenous and bony tissues, as demonstrated by Schulte, a definite and effective barrier exists between the original diaphyseal focus and the knee joint.

In the absence of prominent symptoms he gives ammonium chloride one grain per 10 kilo of weight daily, for the purpose of producing local acidification and arresting active progress. If acute exacerbations occur, the usual extensive excision of the abscessed area is done, bearing in mind that as the epiphyseal line approaches fusion the chances of extension to the knee joint are diminished.

The knee joint may be involved in one of two ways: (1) A relatively dry ankylosing or penetrating synovitis of a destructive nature. (2) A seropurulent peri-arthritis, with marked constitutional symptoms. The mechanics of extension into the joint is either by perforation through the cartilage into the joint or by indirect peri-arthritis extension in the form of a capsular phlegmon.

The prognosis of knee joint involvement is very unfavorable. Wide drainage of the knee and resection are indicated when the following conditions exist:

1. When from the general view point amputation is not necessary.
2. When there is no particular and lymphatic abscess.
3. When the tibia or femur alone is involved.
4. If, after resection, there remains at least one unaffected condyle.

Of four cases in which the joint was radically resected, two later were amputated. The other cases recovered in three months.

(Translated by Paul H. Rempel, Senior Medical Student, Oklahoma University School of Medicine.)

Spontaneous Dislocation of the Hip in Childhood. P. N. Ray. *British J. Surg.*, XXI, 523, January, 1934.

This is a case report of a Bengali child of six, who, six months previously, had had a severe attack of bacillary dysentery. Dysenteric synovitis in many joints occurred during the convalescence, but after six weeks all the joints except the right hip joint quieted down. Clinical and x-ray examinations showed a posterior dislocation with the acetabulum filled with a bony mass.

A dislocation was reduced by the Lorenz method and a plaster cast was applied. The first plaster was removed in eight weeks and the head was found to

be in place. Plaster fixation was continued for a total of four months, after which walking calipers were applied. At the end of a year the patient walked without a limp and there was a good range of motion.

It is believed that the spontaneous dislocation was caused by the excessive muscular atrophy about the hip joint, possibly aided by the over-distension of the joint cavity.

Two Cases of Ossification in the Internal Semilunar Cartilage. H. Jackson Burrows. *British J. Surg.*, XXI, 404, January, 1934.

Two case reports are given of young adults who, both by x-ray and at operation, showed calcification of the internal semilunar cartilage. From the histological studies it is believed that the progress of bone formation is: (1) Hyperplasia of the fibrocartilage, with deposition of calcium, a multiplication and enlargement of the cells, and an increase of the proportion of matrix to fibers; (2) replacement of areas of cartilage by loose, vascular, connective tissue; (3) formation of true bone in the walls of the cavities so formed.

Inasmuch as trauma caused both conditions, it is believed that the bone in each case was metaplastic. The bone resembled that formed by the usual ossification of hyaline cartilage.

Operative Lengthening of the Femur. Vittorio Putti. *Surg. Gynec. Obstet.*, LVIII, 318, February 15, 1934.

The writer has used piano-wire traction and countertraction in eleven cases for lengthening the femur, both in children and adults. The greatest difficulty is encountered in those cases of some chronicity "in reality amounting to a true muscle-lengthening operation by slow skeletal traction." The only complication has been temporary "toe drop" in one case.

During the traction period, the patient is supine with semiflexion of the hip and knee. The average traction weight is thirty to forty pounds. The time of lengthening is about twenty days, followed by four months in plaster and several months of limited support and physical therapy.

The technique of the method is described by Dr. Carlo Scuderi.

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
LeRoy Long Clinic
714 Medical Arts Bldg., Oklahoma City

Clinical Recognition and Surgical Treatment of Parathyroidism. Max Ballin, M.D. *The American Journal of Surgery*, page 36, April, 1934.

The author prefers the term parathyroidism to hyperparathyroidism as indicating increased function of the parathyroid gland.

Parathyroidism, the stimulated function of the parathyroid gland, has just the opposite symptoms of tetany. Whereas in tetany there is a low blood serum calcium and a high serum phosphorus, great irritability of the muscles and fretty temperament and, in fatal cases, the spasticity of the muscles leading to death by suffocation from laryngeal or diaphragmatic muscle spasm, in parathyroidism we have a high serum calcium, in extreme cases up to 24 miligrams per 100

c.c., low phosphorus, below 1 miligram per 100 cc., the muscles are sluggish and very weak.

The symptoms of parathyroidism may be grouped under four headings. First, skeletal symptoms. The surplus or parathormone will take calcium from the bones. In the x-ray such bones will appear thin, washed out, because the shadow-giving calcium is diminished, but not only a general calcium deficiency will be shown in the skeleton, the calcium will fall out in small areas replacing the bone tissue by fibrous and small cystic tissue (osteitis fibrosa cystica). These tumors quite often resemble giant cell tumors of the bone. Of this much we are certain. The parathyroid secretion in exaggerated quantity in the blood will cause changes in the skeleton characterized by decalcification, formation of fibrocystic tissue, cysts and these osteoclastomas or brown tumors. It is obvious that such changes in the skeleton will interfere with their weight bearing ability. The long bones will become bent, will fracture easily in the decalcified areas, the neck of the femurs will slant downward instead of maintaining the normal horizontal position and the vertebral bodies will become compressed, the pelvis will be changed in outline by the sacrum being driven into the pelvic cavity and the decalcification, so-called osteomalacias, will be visible in the bones of the skull and wherever there is bone tissue.

Second, changes in the blood chemistry. Excess of parathormone in the blood liberates calcium and phosphorus from the bones, hence the increased calcium and lessened phosphorus content of the blood. Hypercalcemia is usually present but at times temporarily absent. Much more constant is the increased secretion of calcium through the urine. For the physician and the occasional observer, it is important to know that one normal reading of serum calcium does not speak against parathyroidism just as one normal basal metabolic test would not speak against thyroidism.

Third, muscular weakness. If a patient is given calcium intravenously his muscles become relaxed; in fact, too rapid injection of calcium will cause faintness and severe muscular weakness. This same condition occurs in parathyroidism. Whereas in tetany the muscle is spastic, tetanic, in parathyroidism the muscles are so weak that the legs give way at times and the patient falls.

Fourth, metastatic calcium deposits. It is easily understood that the unusually high calcium content of the blood serum during parathyroidism will bring about the formation of deposits of calcium wherever there is a suitable place.

Secondary calcium deposits due to parathyroidal hypercalcemia are seen in the prevertebral ligaments, in the spleen, intestinal mucosa and especially in the kidneys.

The diagnosis of parathyroidism is, therefore, founded on the clinical history of pain in the bones, especially otherwise unexplained back or leg ache, the patient becoming stooped, bowlegged, shorter, having fractures, muscular weakness and hypotonia, the legs giving away, the roentgenologic changes seen in the skeleton, the chemical changes in the calcium and phosphorus contents of the blood serum and in the secretions.

In the differential diagnosis plain osteomalacias from faulty nutrition, avitaminosis, rickets in children, metastatic malignancy, carcinoma and myeloma have to be guarded against to avoid mistakes. A few cases have been reported even in the well to do, who, usually for the sake of reducing their weight,

lived on tea or some other unbalanced diet and decalcified their bones.

A properly diagnosed case of parathyroidism should be operated on for the removal of parathyroid adenoma or one or two hyperplastic parathyroids. If the diagnosis is established, operation should be performed before great deformities of the bones, changes in the kidneys and etc., render the outlook as to complete recovery doubtful.

The operation. Great care should be exercised to not remove too much parathyroid tissue and to not remove normal parathyroids when the condition is actually due to an adenoma.

—LeRoy D. Long.

Resorbable Metallic Material in Surgery of the Bones (Le Matériel Metallique Resorbable En Chirurgie Osseuse). By Jean Vergrugge, Antwerp, La Presse Medicale, March 21, 1934.

After indicating the well known difficulties often following the use of ordinary, non-absorbable metallic material in surgery of the bones, the author relates his experience in 21 cases where Dow Metal was employed. It appears that this metal is sometimes called "elektron." It is an alloy of metallic magnesium 92% and aluminum 8%. The metal was in the form of screws, bolts or nails. Most of the cases were troublesome fractures of bones in direct relation with shoulder, elbow, wrist, knee, ankle.

A striking phenomenon is the entire absence of pain after operation in all cases, without exception. It is suggested that this is due to the anesthetic properties of magnesium.

A second striking phenomenon is an increased local temperature of about 1 degree centigrade beginning the day following operation and lasting, more or less, for about two weeks. It is attributed to the chemical changes associated with the presence of the metal in the bones. At the same time the general temperature is usually normal.

A third phenomenon is the radiographic evidence of gas about the metal soon after operation. The author believes this results from the action of the combined carbonic acid of the blood upon the magnesium, hydrogen gas being released. It is probably through this same chemical process that the magnesium is finally dissolved, but the definite chemistry of the process is not yet determined.

The rate of resorption depends upon the site, the size of the metallic mass, and individual characteristics and peculiarities. It appears, however, that the resorption is sufficiently slow to permit the formation of a good callus before fixation is modified.

—LeRoy Long.

Lead Poisoning From a Leaden Ball (Intoxication Saturnine Par Une Balle de Plomb). Genival Londres, Rio de Janeiro, La Presse Medicale, March 21, 1934.

This article is of interest because it is generally believed that missiles of lead lodged in the tissues become encysted, if there is no infection, and are thereafter practically harmless as far as intoxication is concerned. This report shows that there are exceptions.

A man of 20 was wounded in the left knee by a bullet discharged from a small pistol. The ball lodged in the bone on the side of the joint.

About two months later there were violent paroxysmal pains in abdomen, persisting for several weeks.

Following this there were pains in the arms, followed by weakness, so that patient was soon unable to feed himself.

The injury was received November 2, 1931. He entered hospital November 26, 1932. At that time there was a bilateral radial (musculo-spiral) paralysis with pronounced anemia, stippled cells, lead line on gums, slight icterus (un leger subictere), a slight arterial hypertension. The clinical picture of chronic lead poisoning was complete.

Patient was kept under observation for a month during which time efforts were made to find some cause, other than the lodged bullet, of his symptoms, but, there being no improvement, extraction of the bullet was advised.

At operation the bullet was found in a small pocket in the bone just to one side of joint, this pocket being bathed by synovial fluid.

Improvement was manifested two weeks after operation, and continued to be progressive and satisfactory.

An analysis of the bullet by Dr. J. Bruno-Lobo of the geologic service showed that, in addition to lead, there were small quantities of antimony silver, arsenic, and traces of thallium.

—LeRoy Long.

Interposition Operation for Procidentia Uteri With a Report of 501 Cases. A. J. Rongy, M.D., A. Tamis, M.D., and H. Gordon, M.D., New York, N. Y. *American Journal of Obstetrics and Gynecology*, March, 1934, Page 428.

These authors are reporting 501 cases of uterine prolapse treated by the interposition operation with very good results.

They briefly review the historical and anatomical considerations in operations for prolapsus of the uterus.

They then discuss the various objections which have been raised against interposition operation which are as follows: (1) That it fixes the uterus in extreme anteflexed position; (2) that it creates an unnatural position for the bladder and therefore causes permanent vesical symptoms; (3) that it is not suitable as an operation of election during the childbearing period; (4) that it is technically difficult to perform and therefore a dangerous procedure in the hands of the inexperienced operator; (5) that there is too great distortion of the anatomy of the soft parts of the pelvis; (6) that patients approaching the menopause no longer require the uterus, and it is just as well to remove an offending organ.

They admit that theoretically these seem to be important objections, but in their practice they have been overcome and with careful selection and proper technique, the majority having been relieved. They report that they have had very little bladder trouble afterward, and lay great stress upon the fact that function of menstruation is preserved. They feel that this operation is the one of choice in the largest number of patients, and that the incidence of cure is greater by this procedure than any other method as yet devised. They also point out an aspect not generally considered: "Should the prolapse recur, the condition is not so hopeless as when a recurrence takes place subsequent to a Kocher or Mayo operation."

The technique of the operation is then carefully described, giving consideration to various circumstances which arise in different patients such as the size and duration of the procidentia, fibroids and pro-

cidentia, the large and congested uterus, and the question of sterilization in young women. They also discuss the general and local post-operative care.

They feel that this operation should be employed not only in those patients approaching or past the menopause, but in women of the childbearing period, who have had two or more children and who desire to be sterilized. They admit that childbearing following the interposition operation is contraindicated, though pregnancies have occurred afterwards in seven of their cases, with normal or instrumental delivery in four of them. They feel that a gynecologist considering the problem from a purely medical standpoint has no reason to refuse to perform sterilization, and that this position has helped to widen the scope of the interposition operation.

They give as the criteria for the usefulness of any surgical procedure the following: (1) The preservation of the organs involved; (2) the anatomical correction of the dislocated organs; (3) the permanency of the operation; (4) the preservation of function.

They contend that after a careful analysis of the interposition operation they are soon convinced that it meets as closely as possible these criteria.

Comment: The interposition operation is an excellent procedure in a certain group of cases, but it should by no means be used as a routine procedure. It should not be employed during the childbearing period, unless sterilization is performed, and most of us cannot so readily arrive at a justification for this additional procedure as have these authors. The cases of complete procidentia past the menopause with a small senile uterus are much better handled by a vaginal hysterectomy and repair such as employed by the Mayo operation with its modification. These authors are so enthusiastic about this procedure that they are inclined to do myomectomies and partial hysterectomies in connection with it in cases in which it would seem rather unwise to do so.

In the proper hands, with the proper technic, in women at or past the menopause, with no associated pathology, with an incomplete procidentia of the cervix, and an average size uterus, the interposition procedure gives excellent results. The incidence of such cases, however, is but a small group of the total number of cases with procidentia.

—Wendell Long.

Dysmenorrhea Relieved by Resection of Presacral Sympathetic Nerves. Alfred W. Adson, M. D., and James C. Masson, M.D., Rochester, Minn. *Journal A. M. A.*, March 31, 1934, Volume 102, No. 13, Page 986.

These authors are reporting 6 cases of dysmenorrhea relieved by resection of the presacral sympathetic nerves.

They have rather briefly and concisely reviewed the historical data, the anatomy involved, and the physiology of the sympathetic nerves in relation to menstruation. They have divided dysmenorrheas into two groups: The true functional type without organic lesions, and those which are complicated by gynecological lesions. In the latter type the surgeon explores the pelvis and corrects the pathological condition. If this is not sufficient, in his mind, to explain the pain, resection of the presacral nerves is performed as a single operation, or it is combined with the resection of the lumbar trunk or with periarterial sympathectomy of the ovarian artery.

They report their experience in one case where they used the periarterial sympathectomy to the common

iliac artery, after the advice of Leriche. They became discouraged because of very little relief of pain in this particular case, though they admit that it may have been due to the patient's unstable nervous system rather than to an ineffectual operation, since she complained of many other discomforts.

The case histories of the six cases reported were given in some detail. They are all rather young women and the results have been exceedingly good.

In these cases as in others reported by both American and foreign authors, there has been no disturbance of the menstrual cycle. It is also pointed out that women who have had this procedure performed have become pregnant in a rather normal way afterwards, though the necessary time has not elapsed in this particular series.

In all of these cases reported medical measures have been exhausted before the operation was attempted.

Comment: Since this operation was first devised by Cotte in 1924 there has been displayed considerable interest in it, especially by the continental surgeons. Leriche and his co-workers have done much of the investigation and the original work. They report very excellent results both for the division of the presacral nerves and that procedure combined with periarterial sympathectomy of the iliac arteries.

Dysmenorrhea is one of the very difficult situations which face the medical profession at this time. Division of the presacral nerve (superior hypogastric plexus) offers a very definite field of application. However, it must not be forgotten that cases must be very carefully selected for this procedure, after all reasonable medical attempts at relief have been tried.

—Wendell Long.

Complications Resulting from Pelvic Irradiation For Cancer of the Cervix. Palmer Findley, M.D., Omaha, Nebraska. *American Journal of Obstetrics and Gynecology*, March, 1934, Page 358.

This author points out that the general recognition of radium as the best present method in the treatment of cancer of the cervix has led to its adoption not only by men especially trained in its application but by the general profession as well. Most of the

reports as to cures and to complications associated with irradiation therapy come from the men who have been trained and who have had a large experience. Radium is a dangerous weapon in the hands of the novice and the untrained. Dr. Findley stresses the fact that it can work wonders but is also capable of much harm. He feels that the unreported use of this method of treatment by the general profession is probably filled with many unnecessary complications, as well as inadequately treated patients.

He then discusses the complications such as pyometria, parametritis and thrombophlebitis. He also reports the collective mortality percentage as from one to two per cent.

He then discusses at some length cystitis, chronic vaginitis, and proctitis, which arise shortly after irradiation. In this discussion the vesicovaginal and rectovaginal fistulae are considered.

He then considers the question of pelvic irradiation in cases who have a cancer of the cervix and are also pregnant, emphasizing the fact that irradiation in pregnancy is most apt to cause monstrosities of the unborn fetus.

He has reviewed the work of Ward, Pemberton, and Bland in their reports of complications from pelvic irradiation.

Interesting in this direction is the general feeling expressed by all of these men that irradiation is a very dangerous procedure where there is any possibility of the intestines being adherent to the uterus, as in cases who have had previous operations, and cases who have had old pelvic inflammation.

Comment: With the greatest care, there is no question but that complications with adequate radium treatment for cancer of the cervix are inevitable. There is also no question but that radium is a powerful therapeutic agent and must be considered as such, being used only by one who feels that he thoroughly understands the present knowledge available upon the subject of its use in pelvic conditions. If this is not so, it is quite apparent that there will be inadequate and unintelligent radiation treatment, and that there will also be complications which could have been avoided.

—Wendell Long.

REPORT OF EXAMINATIONS FOR LICENSES TO PRACTICE MEDICINE.

Examination held at State Capitol, Oklahoma City, March 13th and 14th, 1934. The following applicants passed:

Name	Year of Birth	Place of Birth	School of Graduation	Year of Graduation	Home Address or Previous Location
Bland, Rozier Earl (Col.)	1903	Milledgeville, Ga.	Meharry Med.	1931	Okla. City
Clark, Anson Luman	1893	Elgin, Ill.	Rush Med. Col.	1929	Okla. City
Gould, Isaac Lawrence	1893	N. Liberta, Iowa	Univ. Iowa	1919	Fairview, Okla.
Hays, Anna Luvern	1902	Cass City, Mich.	Univ. Mich.	1926	Tulsa, Okla.
Jacobs, Raymond Geo.	1904	Monticello, Iowa	Univ. Iowa	1928	Enid, Okla.
Kerr, George E.	1867	Ontario, Canada	Detroit Col. Med.	1894	Chattanooga, Okl.
Kupka, John Francis	1903	Shieldsville, Minn.	Univ. of Tenn.	1932	Haskell, Okla.
McDaniel, Bennie Osborne	1896	Springville, Miss.	Northwest'n Med.	1925	Okla. City
McMurry, James Finley	1902	Ector, Tex.	Vanderbilt	1929	Sentinel, Okla.
Peterson, William Garrett	1905	Wilkinsburg, Pa.	Univ. Pittsburgh	1930	Ada, Okla.
Redwine, Harry Page	1904	El Campo, Tex.	Univ. of Texas	1931	Butler, Okla.
Mittleman, Harry Albert	1904	Poland	St. Louis Univ.	1932	Stonewall, Okla.
Baker, Alfred Tennyson	1905	Logansport, Ind.	Univ. of Louisville	1931	Durant, Okla.
Driver, Jesse Walter	1898	Helena, Mo.	Rush Med. Col.	1932	Perry, Okla.
Frey, Harry	1890	Rock Island, Ill.	Hahneman M. Col.	1918	Holdenville, Okla.
Ward, Donald Wolpert	1904	Pueblo, Colo.	Univ. of Col.	1931	Boise City, Okla.
Robbins, Emma Eliza	1876	Papillion, Neb.	Univ. of Ill.	1903	Durant, Okla.

EFFECT OF DIURETICS IN DIFFERENT TYPES OF EDEMA

In order to determine the effect of diuretics in different types of edema Melvin W. Binger and Norman M. Keith, Rochester, Minn. (Journal A. M. A., Dec. 23, 1933), used diuretics and controlled the diet and the intake of fluid in 216 patients presenting edema. In 96 per cent the diet was controlled and contained from 40 to 60 Gm. of protein and from 1 to 5 Gr. of sodium chloride daily. The water component of the food ingested was limited to from 800 to 1,400 cc. daily, in all of the cases of glomerulonephritis, lipid nephrosis, hepatic insufficiency, intra-abdominal malignant conditions, polyserositis, and general edema of indeterminate origin. The same limitation on the water component of the food was applied in 70 per cent of the cases of heart disease and in one of the two cases of myxedema. The intake of extra fluid in the form of water and other beverages was limited to 800 c.c., so that the total intake of fluid amounted to from 1,600 to 2,200 c.c. in 75 per cent of all cases. The average loss of weight varied somewhat in each group studied and was greatest in the cases of myocardial degeneration. Ineffectual results occurred most often among the cases of intra-abdominal malignant conditions. The most constant effect of the therapeutic measures employed in this study was the production of marked diuresis in all types of edema. Similar results have been reported by de Takats in acute edema caused by thrombophlebitis. The edema frequently disappeared and the patient's subsequent course was satisfactory. This occurred often in cases of lipid nephrosis, in the group of cases of indeterminate edema, and in a limited number of cases of myocardial degeneration, cirrhosis of the liver and chronic glomerulonephritis. Other patients, in spite of only temporary decrease in the edema and the necessity of continuous treatment, derived much comfort. In many cases in which there was serious cardiac, renal or hepatic injury, even with subsidence of the edema, the usual progressive course of the disease was not altered. Toxic effects, such as stomatitis, diarrhoea and dermatitis, occurred infrequently. They occurred more often in cases of hepatic insufficiency than in any other single group of cases and usually followed injections of merbaphen. The most frequent toxic effect was definite renal insufficiency which was present in approximately half the cases. Renal insufficiency occurred most frequently in cases of glomerulonephritis and in a considerable number of cases of hepatic disease. In the majority of instances it was a temporary dysfunction, and the value for blood urea fell to the normal concentration and the excretion of phenolsulphonphthalein rose before the patient was dismissed. On the other hand, the renal impairment of 16 per cent of all patients treated was of longer duration and was still present at dismissal. Severe acidosis can be prevented by the careful administration of ammonium chloride or calcium chloride. In the compensated acidosis that so frequently is present after these acid salts, particularly ammonium nitrate, have been taken, mild renal impairment does sometimes occur, but it disappears quickly when the administration of the salt is discontinued. Dehydration resulting from both a low intake of water and a large output of water from continuous diuresis is a possible etiologic factor in the production of this temporary renal insufficiency. In uncomplicated cases of myocardial degeneration, toxic reactions seem less likely to occur than in cases in which there are either renal or hepatic lesions. Organic compounds of mercury produced little evidence of definite toxicity. Mersalyl is the compound of choice. A shift in acid-base equilibrium toward the acid side occurred in all cases

in which a sufficient dose of an acid-producing salt was given. A follow-up investigation of the 216 patients of all groups showed that 104 returned one or more times for further observation. The usual reasons for returning were for re-examination or because of recurrence of edema. Two patients returned nine times each. The highest mortality has been among the cases of intra-abdominal malignant disorders with 85 per cent deaths. Of the patients with hepatic insufficiency, 79 per cent died; of those with glomerulonephritis the percentage of deaths was 68, and 64 per cent of the patients with myocardial degeneration died. Only one patient with nephrosis died; in this case, acute septicemia developed following tonsillectomy. Neither of the patients with myxedema, and only two of the patients of the indeterminate group, died.

DILATION OF THE KIDNEY PELVIS AND URETER DURING PREGNANCY AND THE PUERPERIUM: PYELOGRAPHIC STUDY IN NORMAL WOMEN

In order to verify their previous observations and conclusions, Herman L. Kretschmer, N. Sproat Heaney and Eugene A. Ockuly, Chicago (Journal A. M. A., Dec. 23, 1933), undertook to study a series of forty-four cases of intravenous pyelography, expecting that they might find in this series fewer dilatations, since they suspected that possibly over-distention of the ureter and kidney pelvis by the retrograde method might have increased the percentage of dilatations in their first study. They selected only such women as gave normal previous kidney and bladder histories and who were normal as to urinary examinations and obstetric conditions at the time the study of each case was begun. The authors observed that dilatation of ureters and kidney pelvis occurred in 100 per cent of their cases during pregnancy or the puerperium. The striking feature about the dilatation of the ureter during pregnancy is that the dilatation is almost universally above the brim of the pelvis. As a rule, the dilatation is progressive along with pregnancy. There was one exception to this statement, in which case the ureter was normal in advanced pregnancy when earlier it was dilated. Lateral displacement of the ureter, when found early in pregnancy, tends to increase as the pregnancy advances. In none of these cases did pyelitis develop during pregnancy, although marked dilatation and lateral displacement were present. The presentation and the position of the fetus could not be brought into causative relationship with dilatation or displacement.

MEDICINAL TREATMENT OF COMMON COLD

Harold S. Diehl, Minneapolis (Journal A. M. A., Dec. 23, 1933), shows the relative values of various drugs and drug combinations in the treatment of 1,039 cases of acute coryza, 262 cases of subacute or chronic colds, 114 cases of influenza and 53 cases of acute pharyngitis. Of the drugs studied only opium and certain alkaloids derived from it seem to be of value in the treatment of acute coryza. Combinations of papaverine with codeine, papaverine with dilaudid, and papaverine with morphine were followed by "definite improvement" in from 74 to 78 per cent of the cases. For general use a combination of codeine and papaverine seems most desirable because of the high percentage of good results obtained with it, its low toxicity, and the absence of danger, or at least of "practical danger," of habituation to it. Morphine and dilaudid (dihydromorphine hydrochloride) alone were followed by definite

improvement in nearly as large a proportion of cases (73 and 72 per cent, respectively,) but each was distinctly more toxic alone than when combined with papaverine. Codeine, papaverine, powdered opium, and powder of ipecac and opium were followed by definite improvement in from 56 to 61 per cent of cases. The toxicity of these drugs is in the following order: codeine, powdered opium, powder of ipecac and opium and papaverine, with codeine practically as toxic as morphine. Powder of ipecac and opium, although of value in the treatment of acute colds, is no more beneficial than the same amount of powdered opium without the ipecac. Sodium bicarbonate, acetylsalicylic acid and a combination of acetylsalicylic acid-acetphenetidin-caffeine give little if any better results in the treatment of acute coryza than the lactose tablet used as a control, each being followed by definite improvement in from 35 to 42 per cent of cases. A computation, based on incomplete reports of time lost from their usual activities by patients who received the various medications suggests that it may be possible with the codeine-papaverine or dilaud-papaverine combinations to reduce materially the amount of time lost as a result of acute colds. None of the medications studied seem to be of benefit in subacute or chronic colds. Morphine was tried in influenza but was of no value. The number of cases of pharyngitis treated were too few to justify conclusions, but none of the drugs seemed of value.

INCIDENCE AND PREVENTION OF INCISIONAL HERNIAS

Henry W. Cave, New York (Journal A. M. A., Dec. 23, 1933), states that over an eleven-year period at the Roosevelt Hospital (1922 to 1932, inclusive,) there were 1,928 hernias operated on. Of these, 120 were incisional hernias, an incidence of 6.02 per cent. An analysis of the 120 postoperative hernias showed that the great majority were in patients beyond the thirty-fifth year. Over 60 per cent of the hernias developed within two months following the original operation. In the right upper rectus incisions retraction of the muscle outward resulted in more incisional hernias than occurred in the muscle-splitting procedures. In the intermuscular incision group thirty-six incisional hernias followed operation for acute appendicitis in which the peritoneum was drained. In a follow-up group, 444 patients operated on for acute appendicitis through the McBurney incision the peritoneal cavity was drained in 162 and not drained in 282. Of the 162 patients in whom the wounds were drained, twenty-one developed definite postoperative incisional hernias, giving an approximate incidence of 12.9 per cent in this group. The author does not agree with Garlock's contention that there are fewer postoperative hernias following suture alone of the peritoneum in the drained McBurney wounds. For the prevention of incisional hernia the author cites the following measures: 1. Drainage of the peritoneal cavity is employed less frequently by competent abdominal surgeons. Cholecystectomy wounds are closed tightly. When indicated one should employ stab wound drainage through the right flank. The drains are left in the wounds for a minimum period of time. Cigaret drains are preferable. 2. Suture of the peritoneum and transversalis fascia in the upper third of the abdomen is the most important step in the closure of any wound. In the lower third of the abdomen imbrication should be done with running sutures of live or dead (ox) fascia. 3. When possible all wounds are sutured by layers. Excessive tension should be avoided. 4. Fascial repair should be done

in every case of recurrent incisional hernia. 5. Patients suffering from systemic disease should undergo careful preoperative rehabilitation. 6. The use of silk is preferred throughout in the closure of clean wounds.

IMPORTANCE OF THE SIZE OF STOMACH AND STOMA IN GASTRO-ENTEROSTOMIES

While Edward L. Jenkinson, Chicago (Journal A. M. A., Feb. 3, 1934), feels that the stoma should be large enough in every case to insure proper drainage, he believes that there is a limit to the size of the opening. No doubt radiologists have seen openings that have proved to be too large. In this type of case the food passes through the small intestine too rapidly, and diarrhea and abdominal distress follow. Another condition that is occasionally seen if the pylorus is open and the stoma is too large, is the vicious circle that develops; the food passes through the pylorus and again into the stomach through the stoma.

CALCIUM AND PHOSPHORUS STUDIES: IX. IMPORTANCE OF LOW DIETARY PHOSPHORUS IN TREATMENT OF PARATHYROID TETANY

David H. Shelling and Morton J. Goodman, Baltimore (Journal A. M. A., March 3, 1934), treated two patients with parathyroid tetany with low phosphorus diets. Studies were made of the effect of calcium, magnesium, parathyroid extract and vitamin D on the concentration of calcium and inorganic phosphorus in the serum and on the excretion of these substances in the urine. There are certain theoretical and practical advantages of the low phosphorus diet. The low phosphorus diet is also recommended in cases of renal rickets and nephritis with phosphorus retention. The low phosphorus diet may be used after thyroidectomies to prevent transient or permanent tetany, in renal rickets and in nephritis with phosphorus retention. The use of high calcium diets for the treatment of nephritis with phosphorus retention was previously suggested by Briggs.

BRONCHIAL ASTHMA AS A COMPLICATION OF PREGNANCY

Bradford Green, Philadelphia (Journal A. M. A., Feb. 3, 1934), submits two histories of patients with bronchial asthma during pregnancy, and states that in a patient with true bronchial asthma of anaphylactic origin, the attacks are markedly exacerbated by pregnancy and the outlook can become alarming. In the type of bronchial asthma which is directly related to the sexual cycle, the attacks may appear with each menstrual period, be absent during pregnancy and lactation, and then recur with the reestablishment of the menses. On the other hand, attacks may occur only during pregnancy or even only during pregnancy with one sex and not with the other. The attacks are occasionally associated with a mild toxemia and are relieved when the toxemia is cleared up under conservative treatment. Treatment consists of combating the asthma and disregarding the pregnancy. The termination of pregnancy at best assures only the pregestational state. When the attacks are not accompanied by toxemia but are due specifically to pregnancy, therapeutic abortion might be warranted in extreme cases. Attacks of bronchial asthma are a decided menace to the welfare of the fetus.

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Kiowa.....		B. H. Watkins, Hobart
Latimer.....	E. L. Evins, Wilburton	E. B. Hamilton, Wilburton
LeFlore.....	Harold Hardy, Poteau	W. M. Duff, Braden
Lincoln.....	J. W. Sosbee, Stroud	C. W. Robertson, Chandler
Logan.....	J. Leslie LeHew, Guthrie	R. F. Ringrose, Guthrie
Marshall.....	P. F. Robinson, Madill	J. H. Veazey, Madill
Mayes.....	L. C. White, Adair	W. J. Whitaker, Pryor
McClain.....	B. W. Slover, Blanchard	R. L. Royster, Purcell
McCurtain.....	R. D. Williams, Idabel	R. H. Sherrill, Broken Bow
McIntosh.....		Wm. A. Tolleson, Eufaula
Murray.....		H. C. Bailey, Sulphur
Muskogee.....	Chas. E. White, Muskogee	S. D. Neely, Muskogee
Noble.....	J. W. Francis, Perry	A. M. Evans, Perry
Nowata.....	J. P. Sudderth, Nowata	H. M. Prentiss, Nowata
Okfuskee.....		C. M. Bloss, Okemah
Oklahoma.....	Walter W. Wells, Okla. City	Bert F. Keltz, Okla. City
Okmulgee.....	J. G. Edwards, Okmulgee	M. B. Glismann, Okmulgee
Osage.....	C. K. Logan, Hominy	M. E. Rust, Pawhuska
Ottawa.....	General Pinnell, Miami	J. W. Craig, Miami
Pawnee.....		
Payne.....		L. A. Cleverdon, Cushing
Pittsburg.....	E. H. Shuller, McAlester	L. C. Kuykendall, McAlester
Pontotoc.....	M. L. Lewis, Ada	Hervey A. Foerster, Ada
Pottawatomie.....	R. M. Anderson, Shawnee	H. G. Campbell, Shawnee
Pushmataha.....	H. C. Johnson, Antlers	B. M. Huckabay, Antlers
Rogers.....	W. S. Mason, Claremore	W. A. Howard, Chelsea
Seminole.....	A. B. Stephens, Seminole	Dwight B. Shaw, Seminole
Stephens.....	C. P. Chumley, Duncan	D. Long, Duncan
Texas.....	Wm. J. Risen, Hooker	R. B. Hayes, Guymon
Tillman.....		
Tulsa.....	Ned R. Smith, Tulsa	C. F. Simpson, Tulsa
Wagoner.....	S. R. Bates, Wagoner	John D. Leonard, Wagoner
Washington.....	E. E. Beechwood, Bartlesville	J. V. Athey, Bartlesville
Washita.....	C. B. Sullivan, Colony	E. K. Copeland, Cordell
Woods.....	W. E. Simon, Alva	O. E. Templin, Alva
Woodward.....	H. L. Johnson, Supply	C. W. Tedrowe, Woodward

NOTE—Corrections and additions to the above list will be cheerfully accepted.

THE JOURNAL

OF THE

OKLAHOMA STATE MEDICAL ASSOCIATION

VOLUME XXVII

McALESTER, OKLAHOMA, JUNE, 1934.

NUMBER 6

SUCCESS AND USEFULNESS IN MEDICINE*

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OKLAHOMA CITY

Mr. President, Ladies and Gentlemen:

My first duty is to express my thanks to you for your action in electing me to the presidency. I am all the more grateful because it is well known that that proceeding on your part was a voluntary and deliberate expression of your endorsement of my attitude touching the integral rights of the medical profession of this state.

My thesis this evening is that ethical preparation and technical preparation, supported and beautified by humanism, are productive of success and usefulness in medicine. It is important to understand this proposition, and to that end we shall seek at once a definition of success and usefulness.

In general terms, what is meant by success? The answer to that question may be stated specifically, because it means, obviously, the performance of the functions of a particular profession or calling. In the commercial world the making of money is success, because that is the function of the commercial world. It may be a very useful function, directly or indirectly, but all things which grow out of such a world are based upon the primary function of making money. Usefulness may grow out of it, but if it does it is distinctly incidental and secondary.

What is the function of medicine? Briefly, it is to render every possible service for the preservation of health and for the prevention and cure of diseases and abnormalities of human beings. Success in medicine comes, then, to the doctor who renders such service; it comes, likewise, to any organization or group which renders such service. All things which grow

out of the world of medicine are based upon this primary and basic function. Financial success may grow out of it, but if it does it is incidental and secondary.

It is hardly necessary for me to undertake to define usefulness or to offer an argument to prove that the functions of the medical profession are useful. No sane person would say that the preservation of health is not useful. Only the ignorant have doubt about the usefulness of the prevention of disease. The brutal only would dare assert that efforts to cure the diseases and abnormalities of human beings are not useful. So we see that success and usefulness mean the same thing in medicine. In order to be successful the doctor must be useful; in order to be useful he must be successful.

These principles are embodied in the fundamental laws of this organization, for it is there declared, in effect, that its prime function is to advance the interests of medicine. We have learned already what those interests are, and we know already the results that follow the performance of the function.

As I have indicated in the statement of my thesis, success and usefulness in medicine depend very largely upon three important principles. The first of these principles is ethical preparation. The second is technical preparation. The third principle concerns the humanistic aspects and relations of medicine.

Ethics is derived from a word which means character. A modern definition of ethics is, "The science of human duty; the basic principles of right action."

If ethics is the science of human duty; if ethics indicates the principles of right action; if ethics is the equivalent of character, then it must comprehend honesty and truth and integrity—in sum, it is probity. Now, if this is the proper conception of ethics, the word should not be employed where the importance of the science of human duty is not recognized,

*President's Address, Forty-second Annual Session Oklahoma State Medical Association, Tulsa, May 21, 22, 23.

or where there is not a reasonable understanding and application of the principles of right action.

The medical profession has this conception of ethics. It is a basic requirement of the code which has governed medicine for many centuries. This association has the same conception of ethics, and the proof is that it subscribes to the principles of the code. In this immortal document the duty of the doctor to his patient is indicated, and anyone who studies it will find there the duty of the doctor to his fellow doctor, and the duty of the medical profession to the public. The basic principles of human duty and right action are in that code, but, added to them, are particular, definite and sacred duties which are demanded at the hands of everyone who becomes a member of this association. No member who keeps his obligations and performs the duties which the code requires of him will wilfully neglect his patient; nor will he neglect his duty to his fellow doctor. If he does either of these things he is without the pail of honorable membership; he is without the pail because he does not practice the principles of right action, not to mention the particular principles of this organization. From the standpoint of our code, such an individual, though he be rich in money and lands and goods, is neither successful nor useful.

One of the functions of this association is to promote fellowship and fraternal intercourse amongst its members. That is an ethical function. Through its performance there is created an *esprit de corps* which makes the legitimate burdens and problems and perplexities of any honorable member of the medical profession the burdens and problems and perplexities of every honorable member of the profession. It envisages this association as a brotherhood—a brotherhood which zealously guards the truth—a brotherhood driving relentlessly and with solidarity toward the accomplishment of the purposes of the medical profession.

You have heard the gist of the requirements of the profession to which we belong. In connection therewith I must place great emphasis upon the ethical duties of our members to each other. This is of importance in every case, but it is of particular importance in the attitude of established practitioners toward younger members of the profession who are trying to establish themselves. It is a situ-

ation where unjust criticism, thoughtless or premeditated, might do immeasurable harm. It is a situation where constructive criticism, friendly advice and generous encouragement would do immeasurable good. Hear me, men and women who bear the same burdens and who have the same poignant professional desires; hear me, soldiers in the same army, defending the human race against the ghastly enemies, disease and death; hear me, fellow members of the medical profession: We ought to think many times, and soberly, before we speak ill of each other, and before we even contemplate the performance of an act that might be detrimental or embarrassing to any honorable member of our profession.

If any among you are disposed to charge me with idle or flamboyant statements, I believe that if you look about you and see conditions as they are you would acquit me of that charge. Look about you and you will see that the great mass of the doctors in this state are straight and correct. You will see them working hard in the effort to achieve ethical success and usefulness. But you will see another group—a very small group—some of its members wearing the livery of our organization—whose acts are in contravention to our duties and our ideals, because they substitute commercial success for ethical success—in truth, some of their practices would be condemned in the respectable commercial world.

It is my profound conviction that most of our difficulties, economic and otherwise, have their origin in this small and ruthless group, some of them within our own ranks, a group, the members of which have decided that, for selfish reasons, they will trample upon the principles of their profession; whose only interest in this or any other medical organization is membership through which they filch prestige that they do not deserve.

That preparation for the performance of the duties of any profession is necessary, is a statement that is so sound that the truth of it needs no proof. The necessary preparation may be simple in simple fields. In technical and complex fields the preparation must be technical and complex. Medicine is a technical and complex field. There is no profession which has to deal with more weighty, more vital or more important problems. Therefore, the

preparation for the practice of medicine ought to be as complete as possible.

In order to prepare for the forbidding and stupendous responsibilities of the doctor of medicine, certain standards of medical training have been set up. They are imperfect standards, just as all things human are imperfect, but they comprehend sound principles and reasonable procedures. These standards require technical preparation and training, based upon an ethical foundation. No substitute can take the place of such training. There is no short cut in medicine. There is but one road to travel. Some may travel more swiftly than others, but all must go the same way. The burdens may be heavy, but they must be borne. The duties may be distasteful, but they must be performed. This is the only way to success and usefulness.

The requirements of which I speak are partially enforced by the medical schools and examining boards. But after the student is granted a license to practice medicine he has complete freedom. His future success and usefulness are then in his own hands. If he continues to apply himself; if he develops the initiative and resourcefulness that come from good training and a studious life; if he has industry and tenacity of purpose; if he has proper ethical concepts, it logically follows that he will live a successful and useful professional life. It logically follows, because we have found that success and usefulness in medicine are based primarily upon ethical and technical preparation.

But one may ask, "Is material success in medicine achieved in the same way?" Even so, because he who performs the duties and functions of his profession is useful, and being useful his services will be demanded; and in exchange therefor he will receive compensation commensurate with the service rendered. He may not use the compensation wisely; he may squander it in questionable financial undertakings about which he knows little or nothing, but that does not alter the important and logical fact that his usefulness will be the determining factor in connection with the compensation that he will receive.

This conception of the practice of medicine is not only logical, but it is comforting. It is comforting in prosperous times;

it is even more comforting in times of general financial stress and uncertainty.

To the properly prepared, straight-thinking and conscientious young doctor who has laudable ambitions, such a conception is particularly encouraging. Seeing the profound truth of it, he realizes that he, himself, can largely determine his professional destiny. What a doctor amounts to in medicine—what he amounts to in the world—do not depend upon legislation; nor upon practice *en masse*, with a medical tycoon here and there; nor upon visionary insurance schemes where a large part of the money collected finds its way into the hands of the promoters. What he knows, how he lives, what he is able to do, what he does—these are the qualifications upon which his career must be built.

The third principle of which I wish to speak concerns the humanistic aspects of medicine. Humanism signifies the cultural side of education, but, unfortunately, it has but a small place in the average pre-medical curriculum, almost none at all in the curriculum of the average modern medical school, and I am afraid that it does not have a very large place in the average modern educational institution, regardless of its character. During the last twenty-five or thirty years there has been a drift from polite learning toward an education for efficiency alone. This drift has continued until both academic and professional education are closely bound to material utilitarianism. Facts have been accumulated, but too often their employment is without the saving guidance of a sound philosophy, because we are far away from the ideal of classical training. People are educated, but not broadly educated.

One of the embarrassing results of this system is that it is now more difficult for educated people to meet upon common ground. But that is a minor difficulty. The chief difficulty lies in the failure to recognize the fundamental importance of polite learning which tends to the production of intellectual repleteness and intellectual stability. It is important because it promotes deeper thinking and clearer reasoning. It furnishes a perspective that can be furnished in no other way, and that emphasizes its importance. Finally, it is of preeminent importance because it leads to wisdom.

My confreres, with these principles—the principles of ethics and technical prep-

aration, strengthened and adorned by the principles of humanism, beneath him and about him, the man of medicine moves forward and upward in the work of his profession. He moves with self-respect for he is conscious of his own integrity. He moves with self-denial, for he is master of himself. He moves with confidence, for he knows that "to him that hath shall be given."

PNEUMOCOCCIC MENINGITIS. REPORT OF CASE WITH RECOVERY FOLLOWING CISTERNAL DRAINAGE

Caroline C. Bedell, Baltimore (Journal A. M. A., March 17, 1934), reports a case of group IV pneumococcic meningitis in which complete recovery followed the early use of continuous cisternal drainage, using the method described by Dandy in the treatment of staphylococcic and streptococcic meningitis. The author states that it is probable that only early cases of pneumococcic meningitis would respond favorably to such a course of treatment, since it depends on free flow of cerebrospinal fluid from the ventriculosubarachnoid system. It is significant that 200 cc. of cerebrospinal fluid escaped from the cisternal tube daily. The maintenance of approximately normal intracranial pressure, throughout the course of the disease is desirable from the standpoint of minimizing intracranial lesions and for the general welfare of the patient. The author made repeated determinations of the typing, the bile solubility and the autolysis in salt solution of the organism isolated. There seemed to be no question that she was dealing with a pure culture of pneumococcus group IV. Pneumococci, while plentiful, were never found in overwhelming numbers in the spinal fluid. This suggests that early establishment of drainage and irrigation was effective in combating their rapid multiplication. The rapid progression of symptoms and abrupt rise of temperature to 106 F. during the hours of meningeal invasion ceased spontaneously immediately after the operation. Dandy suggests that meningitis of otogenous origin is probably more grave than that following trauma or accidental inoculation of the cerebrospinal fluid. In the author's case there was a preceding sinusitis, which was never severe. The antrum wall was traumatized during irrigation. The sinusitis subsided spontaneously during hospitalization. The patient actually suffered from two attacks of acute meningitis occurring in quick succession. The cisternal drainage tube had been in place six days when the superinfection occurred; gram-positive cocci were still present in the smear of the spinal fluid sediment, chiefly intracellularly. Culture of the spinal fluid over a period of nine days yielded bacillus proteus; thereafter the cultures were sterile. The bacillus proteus infection produced a greater polymorphonuclear response in both blood and spinal fluid than had the pneumococcic infection alone; whether this outpouring of leukocytes could have been helpful in clearing up the residual pneumococcic infection is an interesting question. The exact mode of entry of the secondary invader could not be determined, but the occurrence is hardly surprising, since the catheter had been in place six days and had been subject to repeated manipulations, while the dressings about the open cervical wound had not been changed for fear of disturbing the functional efficiency of the drainage tube.

THE DOCTOR IN POLITICS*

LOUIS H. RITZHAUPT, M.D.
President-Elect
GUTHRIE

The responsibility of every American citizen is self-government. After this primary requisite is accomplished their influence should be extended into the government of city, county and state. The time has come when the level-headed educated men and women should direct the way, and lead those who are less advised and more easily influenced, rather than turn them loose to the prey of communism, anarchy, bolshevism and various other organizations of red ruin.

I am endeavoring to arouse the medical profession of Oklahoma from their apathy and make them realize that there is just as much sickness in our state government as there is in the people. It is high time we accept our responsibility, make a diagnosis and advise the treatment necessary. I ask you, what other profession is there among mankind that carries the physical and social welfare of the nation in the palm of its hand? Our foresight, scientific study and ingenuity not only cures the ills of the present generation, but attempts to assure the welfare of those to come. I challenge the members of the medical profession to take more interest in all forms of government. Our responsibility does not cease until all manner of ills have been remedied.

The American Medical Association has constantly regulated and increased the requirements of the medical profession with the intention of insuring competent and qualified practitioners of medicine and surgery. At the present time our profession stands as a pier among the professions of the world. All the good thus accomplished has been offset by the legalization and entrenchment of one cult after another. These inferior practitioners have, to a certain extent, taken the place of the incompetent medical doctor. They have fooled the unsuspecting and relief-seeking public. The physicians and surgeons look upon themselves too lightly. They forget to sell themselves to their patients, while the inferior practitioners, with nothing to offer, capitalize on the ignorance of the public and advance their

*Delivered before General Session Oklahoma State Medical Association, Tulsa, May 21, 22, 23, 1934.

personalities for unearned financial gain. The medical profession is the right arm of salvation to the entire human race, whether they be sick or well, and it behooves this body of intelligent men to arouse themselves and accept this responsibility. It is time that we should unite, cease to be competitors one with another, cease to find fault with the work of our brother, cease to be used as a tool by some questionable lawyer to testify against a fellow in our profession. It is high time that we should demand more respect, make our patients our servants instead of being their servants, yet serving them with all the tenderness, long suffering and compassion which was demonstrated by the great healer, Christ himself.

There is certain legislation which the thinking public is at this time demanding and which the medical profession should advance.

First: A law for the protection of the masses against unqualified healing cults or isms, and the like. Call this law a basic science, or an essential curative act, or what you may. The government has laws regulating the formation of banks, building and loan companies, corporations and various other business enterprises. There are laws regulating and restricting gambling, horse races, selling of alcoholic beverages, using of habit-forming drugs, and even game chicken fighting. For the protection of Oklahoma's population there should be a common standard for all professed manner of healers, whether they are scientists, osteopaths, chiropractors, faith healers, or physicians and surgeons. It certainly is essential that any type of healer know the fundamental principles of the human body.

Second: The doctor has been called upon to sacrifice more time, knowledge and energy during the last two years than any other profession. Surely the laborer is worthy of his hire. Before the surgical and medical burden of the poor can be equally carried, some county or state taxation must be instituted. The revenue derived therefrom to be used as a compensation for those administering to and providing for the needy.

There was introduced in the fourteenth legislature Senate Bill No. 394: "An act authorizing the county commissioners of each county in the state to make a special levy for the purpose of taking care

of the charity in each county, providing the method of expenditure and designating the kind of people to receive aid; providing that any excess funds remaining in the special fund as authorized should be held as an emergency fund, the same to accumulate for a period of five (5) years; designating how the emergency fund could be used, and if not used should revert to the general fund of the county; providing for the appointment of a county physician-surgeon, county health nurse, a method of creating a county health board; fixing the salaries thereof, designating the tenure of office; providing for expenses thereof, describing duties; prohibiting the operation and forming of charitable organizations without the consent and approval of the county health board and the governor." It was impossible to obtain sufficient cooperation in the house of representatives to get this, or any similar bill, passed. I was not well enough acquainted with the medical profession throughout the state to secure their assistance.

Third: The new state insurance law should be amended with provision made for the compensation of the physician. The state industrial commission should have as its member a competent physician and surgeon to aid in judging the extent of a client's physical disability.

Fourth: Suitable funds should be provided for the proper maintenance of the public health department and the various health institutions in the state.

I have left to the last the most important problem that confronts us, and that is the creation of a state medical practice act, or a law similar to that which now regulates the attorneys-at-law. (This will be found in Chapter 22, Oklahoma Statute, 1931.) It is commonly known as the State Bar Act. Such a law adapted to our profession would make the Oklahoma State Medical Association and the Oklahoma State Board of Medical Examiners the empirical dictators and regulators of all medical men attempting to practice medicine in the State of Oklahoma: giving them power to remove those of our profession who have forgotten its high calling and the oath of Hippocrates.

It is important that we purge our own profession of those who would not yield to a law agreed upon by a majority. Such a law, associated with one regulating the requirements of other cults and isms,

would be advantageous to the entire population.

Such proposed laws should be thoughtfully considered and created with considerable caution, probably using as a pattern similar laws of other states which have withstood the legal bombardment of all opponents.

After suitable senate and house bills have been drawn and introduced, it is important that the entire vote of the legislature, or that portion of it which is necessary to place them on the statute books of Oklahoma, be secured. It is important that each candidate who is running for a member of the state legislature be approached upon this subject. Those who are not willing to lend their vote for the advancement of such issues do not have the welfare of the people at heart and are not qualified for the office. The medical profession in the district should be notified, no matter if it involves our personal friend or if it is necessary for us to go beyond the bounds of a political party; we should lend our aid only to those who are favorable to such program. Before the legislature convenes, or such bills are advanced, it is important that we know our strength so that they can be passed without any organized or open opposition.

Let us not forget that it is important to elect a governor who is friendly to such legislation and will enforce the law.

I have not attempted to outline a perfect medical practice act, nor a basic science law, and most assuredly I am not advancing any individual as a member of the state legislature or as governor of the State of Oklahoma.

The members of our profession enjoy the confidence of the majority of the people with whom they are associated. We have an organization that goes into every county and every community. If our entire strength is pooled together for any candidate or political issue and our influence is exerted upon our friends we will be the greatest organized political factor in the State of Oklahoma.

I am anxious that this assembly now in session empower a committee to gain the information I have outlined, asking them to give us an unbiased political opinion of all state candidates and vote for and support those whom they recommend. Allow me to advance this idea, that such political setup extend into each county of the state.

In closing, I ask that the doctors present forget personal differences and professional timidity, reach out and grasp the handle of the oar and aid in pulling the ship of state into a harbor of tranquility that will protect the unsuspecting public and elevate our profession and the profession of all healing arts onto a higher plain.

ROENTGEN DEMONSTRATION OF CALCIFIED CORONARY ARTERIES IN LIVING SUBJECTS

Paul H. Wosika and Merrill C. Sosman, Boston (Journal A. M. A., Feb. 24, 1934), emphasize the fact that it should be remembered that not every small fleck of calcium in the coronary arteries can be visualized roentgenographically. A fairly large amount of calcium is required to interrupt enough rays to cast a shadow that can be recognized. Judging, however, from the numerous instances of massive calcification of the coronary arteries noted at the necropsy table, the roentgen diagnosis during life should be a common one. It is well to emphasize again that these small calcifications in the heart shadow are seen only when they are searched for. The observer, when his eyes are properly accommodated, should look through the cardiac shadow on fluoroscopic examination rather than simply at the movements of the heart borders. The patient should be rotated in all directions. Closing one's eyes for a few moments often rests them and brings out the dark shadows more clearly. That this intracardiac calcification is seen only when looked for is well exemplified by one of the authors' cases. This patient had been examined fluoroscopically on three occasions and only two months had elapsed between the discovery of the calcified vessels and the previous examination. The amount of calcium present could not possibly have developed in those two months, regardless of the increased heart size. Fluoroscopically, as one would expect, the calcium deposit is seen in the coronary sulcus. This is high on the left border of the heart and is seen best in the right anterior oblique position. The shadow cast is quite close to the heart border, apparently just under the pericardium. There is a slight movement during systole which is similar to that of the heart edge directly over the deposit. The shadows are to be differentiated from calcification in the valves by their location. Valvular calcifications are usually found by locating the auriculoventricular groove on the left border and searching through the heart shadow downward, inward and medially at an angle of 45 degrees. The movement of the valvular calcifications is also characteristic in that they move toward the apex with systole and occasionally intrinsic movements of the valves may be seen as well. This imparts the dancing motion that has been described previously. The appearance of the calcified arteries on films also is characteristic. The shadows appear linear and segmental and are curved corresponding to the course of the artery. The linear shadows also appear double on the speed films and parallel in places as if one were seeing the walls of the artery. In the authors' three cases the arrangement of calcium in no way resembles the structureless mass of calcium seen in the valves. Other areas to be differentiated from the calcified coronary arteries are (1) pericardial calcification; (2) calcified costal cartilages; (3) bronchi behind the heart, and (4) calcified lymph nodes or nodules.

THE RELATIONSHIP OF THE UROLOGIST TO THE GENERAL PRACTITIONER*

S. D. NEELY, B.S., M.D.

MUSKOGEE

The progress of medicine has been so great during the past quarter century that it has been impossible for one man to read all of the literature, and keep up with the advances in all branches. A division of labor has thus occurred in the medical field, resulting in specialization. Urology is one of the youngest members of this stately hall of medical specialties, only approximately twenty-five years old, but during this time it has grown by leaps and bounds. The practice of this branch of medicine is intimately associated with general medicine, and a good background in general medicine is absolutely essential. Medicine of today owes much to urology. McCarthy has fittingly said, "the tremendous lowering of mortality rate in prostatectomy, the development and perfection of the cystoscope, the establishment on a sound basis of the value of blood chemistry and functional test, the roentgenographic study of the urogenital system, uretero-pyelography, cystography, seminal-vesiculography, and the delineation of these structures with mathematical precision, it is safe to say that urology, from the standpoint of diagnosis, is within 5 per cent of a correct science."

Thirty years ago the urologist of today was a venereologist, but the intervening time has seen a vast metamorphosis of this one man. Venereology has always been an outcast, a study of which has held very little inducement to the medical student compared with other major branches of medicine. Today it is called the bastard child of urology. Many eminent urologists today pay no attention to the venereal triad. Thirty years ago, Finger classically described the pathology of gonorrhea, and nothing has been added. Text-books of today only mention pathology in discussing this subject. Pelouze, in his monograph "Gonorrhea in the Male and Female," stresses the importance of thoroughly understanding the histology and pathology of these structures before attempting treatment. Many chronic gonorrheics are

made so by meddlesome treatment. Rex Bolend, in an article before the Oklahoma State Medical Association some time ago, stressed the importance of gentleness in urology, and in venereology this can be doubly emphasized. You should know that once the gonococcus has become grafted upon the delicate mucous membrane of the urethra and, as the old saying is, "dug in," no drug we know is capable of eliminating the disease. Conversely many drugs are harmful. These tissues must be allowed to develop their own immunity and resistance to this infection, and if mauled and hammered they only become subject to deeper and more intensive involvement as well as extension. Then be careful not to use drugs which will tear down this immunity. It would be far better to use a normal saline solution for irrigation, or injection, if you think necessary, than one of silver nitrate, zinc sulphate or other irritating drugs. Remember, in acute gonorrhea it is not the drug used; about all the good that you can do with injection or irrigation is local cleanliness, and if you exceed this and apply astringents or irritating drugs, you are defeating the very necessary item of immunity of these tissues.

I have had patients tell me that their prostates were massaged in acute gonorrhea. Others that catheters were passed for irrigations, and still others that "shots" were used in their arms, and this only. I wish to say that this kind of treatment is, and should be, subject to damages in court. Surely one dealing with acute gonorrhea had best leave the patient alone during the acute stage and allow him to build up his own cure in the immunity that his tissue cells will produce. I think that the best results in treating acute gonorrhea is: first, get the confidence and cooperation of the patient; advise him as to rest, water intake, abstinence from sexual excitement and alcoholics, rather than treatments; however, if given carefully and in weak enough concentration, they assist some. When the discharge has ceased and the urine is clear in both glasses, surety on your part of a cure, which means light prostatic massages, sounding of urethra and instillations of silver nitrate and then examination for gonococcus is vastly more important than meddlesome therapy in the acute stage. If more attention were paid to the so-called clean-up cases in male and female, better results would be secured in eliminating the disease.

*Chairman's address, Section on Urology, Dermatology and Syphilology, Annual Meeting Oklahoma State Medical Association, Tulsa, May 21, 22, 23, 1934.

The study of the urologic tract does not lend itself to the well-tried methods of auscultation, palpation and percussion, mostly due to the location of these structures. Here we come more and more to visual methods. It may be said that there is no part of these structures which can not be studied with the eye directly, indirectly, or through a picture of their shadows.

Urologic phenomena, as pyuria and hematuria, cannot be accounted for by auscultation, palpation or percussion, still it is common to see these cases treated over long periods of time without any attempt to arrive at a conclusive diagnosis. One of the most flagrant examples of this is the therapy of so-called cystitis, a catchy word, meaning nothing practically, so far as describing the causative pathology. When the diagnosis of cystitis is made, the concurrent pathology should be added. You seldom, if ever, have a primary case of cystitis. The mucosa of the bladder will stand unlimited insults; it is one of the most resistant of the mucous membranes of the body to infection. It is only repeated insults, and repeated invasion of organisms from other points, that overwhelm this mucosa and results in its injury; then this structure becomes part and parcel to the disease. The bladder, we know, is the receptacle of the contents of both kidneys through the ureteral orifices; it is intimately associated with the male and female generative organs, and is in intimate contact with the posterior urethra. Consequently, infection in the bladder only means that you have this infection fed into the reservoir, and this infection will continue just as long as the original focus remains.

To successfully examine urine from a female, it should be per catheter, fresh, and into a clean receptacle. A voided specimen means nothing except through the chemical analysis, and even then may show albumen from the red cells picked up at the vaginal orifice.

Hematuria is only a danger signal, meaning somewhere in the urogenital system active pathology is present. It is a symptom, not a disease. It will not suffice to put this patient to bed, order a styptic, urinary antiseptic, and procrastinate with them about the treatment and its success. The best time to examine patients with hematuria is when they are bleeding. Then, if mechanical means are used, it can be determined which ureteral

orifice is involved through a cystoscope, the bladder inspected for bleeding points, and urethral mucosa as well. It is simple to watch the urinary orifice and determine which one is discharging a bloody jet, but it is entirely different after the hemorrhage has ceased. Many times procedures that would be unnecessary, if examined while bleeding, have to be resorted to in locating the pathology after the hemorrhage has ceased. This hemorrhage may not return for many months, or years, and in this interval precious time is lost. The small benign papilloma of the bladder has become malignant; the calculus, which perhaps could have been removed mechanically, has increased in size and necessitates surgical procedure; the unilateral tuberculosis may have become bilateral, thus jeopardizing this patient's life, or even, at best, the possible chance for recovery. In other words, what may have been a simple matter only becomes more complex with delay. Much responsibility rests on the physician who first sees the patient with hematuria; they, as a rule, can be easily induced to subject themselves to complete urological workout, if necessary, to arrive at a correct diagnosis. Naturally, I am granting that this hematuria is not a hemaglobinuria, which can be determined on first urinalysis; also that the patient has no other disease in which the hematuria is only a part. I mean purpura, malaria, acute nephritis, typhoid fever, etc.

It is an easy matter to catheterize a female, or to ask a male to void in two separate glasses. Make a chemical analysis of this, centrifuge a specimen, place a drop of the sediment on a slide, and with cover slip examine under medium power of the microscope. Make a gram stain of another specimen of sediment and study it under the microscope for disintegrated white blood cells and organisms. After you have done this you have exhausted the resources of most routine work with the urine. Add to this prostatic palpation, very gentle massage, collection of this secretion in a clean receptacle, placing a drop of this on a slide with cover slip and study under the medium power of microscope, and you have gone another step, which every physician should be able to do. If not, it is because you are either too lazy, too busy, or are not nearly conversant with the microscope. Each and every one of us were trained in school in the uses and abuses of the microscope, and still this important instrument is too

often allowed to become dusty and unused. Naturally, if you wish it, the commercial laboratory can do this, but it adds expense to the patient, who is supposed to get value received for his money. If this were done on every patient in any way presenting symptoms suggesting the urologic tract, how much more interest it would create, how much better results you could secure, and how much more satisfaction in knowing you are doing your duty towards the patient. If your patient is a male and gives the history of gonorrheal infection and the above does not reveal any information, pass small bougies down the urethra; if no resistance is felt, and a urethroscope is handy, examine his anterior urethra carefully under vision.

Pyuria is another common phenomenon. What was said under hematuria applies here, providing in the male you cannot find the cause in the anterior urethra, the posterior urethra and its accessory glands. The two-glass test is of importance here. If the first glass is cloudy and the second clear, then in all probability the pathology is in the urethra anterior to the bulbo-membranous portion. If the second glass is cloudy also, the pathology is above the bulbo-membranous urethra, or in the kidneys, ureters, bladder, or posterior urethra. Familiarity with the cystoscope and cysto-urethroscope is very essential here in arriving at a diagnosis. Observation of the posterior urethra, bladder, and ureteral orifices can be made directly, the jets carefully watched from each orifice, ureteral catheters inserted into the pelves of the kidneys to locate and treat the existing pathology. In this way divided specimen can also be secured and examined.

One common source of disease in the female that is often overlooked is the urethra. More often than is supposed this canal is subjected to stricture formation, and all of the existing symptoms will clear up after dilation of this structure. Cystocele may cause a bladder retention, as may also spinal cord lesions and atonic bladders. Once the residual is begun, it most often increases, with strong inclinations to become infected, and then the patient has all the symptoms of cystitis in varying degrees. Should a physician doing this type of work get his ego inflated to too high a degree he will certainly get it punctured on some middle-aged female patient coming in for relief of dysuria, pain and frequency. You must remember that one and one-half inch of urethra, and the

two most common causes of symptoms caused by this structure, caruncle and stricture. Both are easily treated, one with the cautery, the other with dilation, and both will net you a very grateful patient. Here I will mention a method which has served me in determining the residual in the female. Empty the bladder per catheter. Put in a certain amount of plain distilled or boiled water, and have her assume the position she can void best in, and void all she can, and the residual is that amount remaining in the bladder, or the difference in amount she passed and amount put in.

The relationship of urology to the different specialties occupies a special field, but some of the high points will be considered here. In diseases of children we must remember that children are subject to the same diseases of the urogenital tract as the adult, and that they are much more difficult to recognize, due to the fact that you do not have the cooperation of a mature mind in the delineation of symptoms. Frequency of urination, cloudy urine, undetermined fevers, etc., call for careful urinalysis, and if abnormal constituents are found the same procedures are indicated as in the adult. Urologists have become familiar with working with smaller instruments, smaller cystoscopes, smaller catheters, etc., and should be willing to exercise much patience and ingenuity in working out from a urological standpoint infants and children. The man doing pediatrics must keep constantly in mind the urologic tract, and be ready to recognize symptoms from these structures. Urology in childhood has become almost a specialty inside a specialty.

Campbell, in *Journal of Urology* for September, 1932, in writing on eneuresis, states that the diagnosis of eneuresis is usually made on the basis of a child wetting its bed or clothing, or perhaps suffering from marked frequency of urination with rare incontinence. He considered eneuresis as unintentional or involuntary nocturnal or diurnal urination in the absence of demonstrable pathology. In a series of 249 cases four years of age and older, investigated by himself, organic disease was found to exist in 60 per cent. Due to this large per cent of uropathies he disagrees with those who claim eneuresis to be due to purely functional psychic or emotional manifestations. He states that two and one-half years is the age at which a child should gain full control of

its bladder, but for urologic study he eliminated all those under four years of age. Most every urologic pathology was found in this series. He insists on a complete urologic study in those children after three months of palliative treatment who are over four years of age. In discovering the pathology present, further destruction of the urologic system can be prevented, the underlying disease perhaps cured and incidentally the enuresis ceases. When complete urologic study fails to reveal any underlying pathology, then you can rest assured that normal vesical control will eventually be established.

The obstetrician can find a very handy ally in the urologist, and one he needs greatly at times. There are a few points I wish to state here dogmatically, and I claim no priority for their utterance. I believe that no pregnant woman has received even mediocre attention from the medical profession in this day until she has had a blood Wassermann test made. The excuse may be offered as to the price, still in Oklahoma this can be done by the State Department of Health and without one cent cost except postage. I believe it inexcusable. To my mind this is one of the greatest means we have of combating congenital syphilis. I believe that every pregnant woman who gives you a clear-cut history of luetic infection, should have some form of antiluetic treatment during the pregnancy, regardless of the Wassermann report. I believe every male child should be circumcised; in this way we do much towards preventing cancer of the penis. Wolbarst, of New York, has made the statement that he has never seen a cancer of the penis in the Hebrew race who practice this as a religious custom. We do much also, I believe, in preventing the venereal triad when circumcising all male babies; it is much easier for this boy and man to keep clean, and much less likelihood of contracting gonorrhea and syphilis. I believe that every genital lesion should have a dark field examination, unless you, personally, are sure that there is no chance for spirochetal infection, and this is the same as always. I do not believe there is a man living who can look at a genital lesion and say "luetic," or "not luetic," and I believe that if he tries it he shows his ignorance. We are past the older methods of diagnosis by feel, touch, etc., when we have the exact and precise method of diagnosis as the dark field in genital lesions. I should

call it malicious practice to doctor up a lesion on the genitalia with different medicines as nitrate of silver, calomel, mercurochrome and what-not until this important examination has eliminated primary syphilis. If we wait until this patient has a sero-positive syphilis then his or her chances of cure have certainly been jeopardized by the physician doing such practice. There is not a man in this audience who cannot do these little things, and how far-reaching they may prove to be.

Pyelitis of pregnancy has been a much discussed subject. Different theories have been advanced as to the cause, still at this time we are more or less in the dark as to the etiological factor or factors. If this condition presents itself, and cannot be controlled with increased water intake, rest, and some urinary antiseptic, instrumentation as cystoscopy and urethral catheterization with pelvic lavage is in order.

I wish here to say a few words about urinary antiseptics. One of the best I have been able to find is water. Urotropin, with an acidifier, as acid sodium phosphate, acts excellently in some cases. Best results can be secured from this therapy, I believe, if you watch the reaction of the urine, giving urotropin and acid sodium phosphate for from five to seven days, then switching to an alkaline with neutral acriflavin. Hexylresorcin has the disadvantage of gastric upset in a great number of cases; too, it must be given for a greater length of time to secure results. Pyridium, serenium and other dyes are best given with a decreased water intake to insure a concentration of sufficient strength for action, and here you must consider the possibility of increased pathology through concentration of urine. Helmholtz and others of the Mayo clinic have recently published articles on ketogenic diet and its influence on urologic infections. In bacillary infections this mode of therapy has produced good results and even better than any other. Rigid care as to detail must be carried out; ketone bodies must be produced in the urine, and the urine must be kept at a hydrogen ion concentration of 5.2 or less. Montague Boyd, of Atlanta, in Southern Medical Journal of August, 1929, in speaking on urinary antiseptics, says: "The publicity given urinary antiseptics in the last few years makes it advisable to redirect the attention of the profession to

the need of removing the cause of urinary infection, as well as treating the patient with urinary antiseptics. The cause for the production and continuation of the infection being removed, there is a tendency for the body to overcome infection, so that in many cases only a little assistance from urinary antiseptics is required for apparent cure."

One of the most recent contributions to urologic research was announced in 1929 by Von Lichtenberg, of Germany. He had developed a compound of urea and iodine (uroselectan) which, when injected intravenously, was almost wholly eliminated by the kidneys, and when in sufficient concentration in the urine would cast a shadow on an x-ray film. This, classified as intravenous urography, was hailed by some as an absolute diagnostic procedure, despite its author's warning to the contrary. Many different compounds have since then been introduced, the latest and easiest given being neo-iopax. There are definite limitations to the diagnostic value of intravenous urography. It assists greatly in hydronephrosis, calculi, or any other condition where urologic stasis is suspected. It also assists greatly in the interpretation of renal function. It should be used in any case where cystoscopy is impossible or extremely painful, as contracted bladders, tuberculosis of the bladder, massive hypertrophy of the prostate, stricture and other conditions where urethra will not admit a cystoscope. It should not be used as a sole diagnostic procedure in pyurias and hematurias with the exclusion of cystoscopy and retrograde urography.

In and around the posterior urethra in the male are many interesting and very complex structures. To this day we do not know the function, nor do we understand the veru-montanum, that delicate structure forming the floor of the posterior urethra. It is here that the seminal vesicles empty; the vesicular ducts traverse the prostate and empty on either side of the veru-montanum. The prostate empties by some fifteen to twenty small ducts on the floor of the posterior urethra. To remind you, this posterior urethra is just about equal in length to the female urethra, but in addition has all of the previously mentioned structures. Many times polypi, excessive redness, and minute ulcerations can be readily demonstrated and controlled by cautery, medicinal or electrical. The instillation of silver nitrate

1-8 to 1 per cent, sounds, Kolman dilator, and non-specific protein injections will in many instances get a satisfied patient. If it does not respond, then further consideration may be given vasotomy or vasectomy with injection of silver salt solution into the vesicles.

When we deal with the prostate we think of malignancy, hypertrophy, the condition commonly called prostatism, and prostatitis. Malignancy, I will not attempt to discuss, only to state that the therapy of this condition before it has metastasized is certainly surgical. If it is thought that the condition has advanced beyond cure in this way, then palliative therapy only is indicated as resection or punch procedures, providing the symptoms demand these. Prostatitis yields generally to light massage every two to four days, dilations of the posterior urethra, instillations of silver nitrate, diathermy, and non-specific protein injections. Autogenous vaccines may be resorted to, if thought necessary.

One of the monuments of urology today is the advances made in the past few years in dealing with the obstructing prostate. This condition as a rule occurs after the age of forty-five; it is insidious in onset, the patient at first having nocturnal frequency so insiduously that he does not notice it; he grows more nervous, apprehensive, languid; the frequency increases; he does not sleep well; may have minor aches and pains over his body, migrating in character; he is not as active as formerly. In other words, there has been a slowing up of his whole organism. Nocturnal frequency, or complete retention, usually brings him to see the physician, maybe dribbling, slowness in starting the stream, or perhaps he knows he is not up to par. Here, a finger in the rectum will give you some information. Allow this patient to void all he can, and then catheterize him. If his retention is above 15 cc. he had best be put under observation; if it is above two ounces, there probably is enough blockage in the urinary outlet to seriously consider operative procedures to correct it. Local medication, mild irrigations and diathermy may cause considerable decrease in residual urine by reducing the edema present at the bladder neck. If the decrease is not noted in three or four weeks, then other procedures had best be considered. I wish to state here that I believe that these men should first be handled medically to as-

certain whether or not some reduction in residual or edema at the vesical neck will result with consequent reduction in their symptomatology. In other words, do not take these men off the streets and operate them in any way or fashion, for to do so only encourages failure. During this period of medical treatment the patient has been studied carefully, blood chemistry has been made, his cardio-vascular system has been checked, he has had rest and drainage, he feels or should feel much better. During this time a vasectomy should be done. Here I wish to stress the importance of this simple procedure. The best statistics we can gather vary from 5 to 10 per cent of epididymitis following any type of work surgically done on the prostate. This is a very disabling condition, and often renders these old men much worse than anything which could happen to them. This simple tying of the vas will prevent epididymitis, and should be done on each and every man presenting any symptoms of prostatism. It takes some seven to ten days for these tissues to heal sufficiently to warrant further work in the urethra, but you can work in this field almost at will after this has been done. The next step is to pass a cystoscope or cysto-urethroscope and study carefully the obstructing tissue, assure yourself of the ability of the urethra to carry a straight instrument of this calibre. Search his bladder for calculi, and diverticulae, catheterize his ureters and do a divided P.S.P. test if thought necessary. Radiograph work can be done, cystography, and unretrography if thought necessary. I have heard Doctor Hugh Cabot say that most any surgeon could do a prostatectomy, but that very few urologists could prepare a patient for this grave procedure, nor post-operatively care for him in the best way. It is the pre- and post-operative procedures most often responsible for the high mortality and morbidity.

There has recently been in the literature procedures described which, in time, I believe will revolutionize the surgical work on the prostate gland. This is by so-called resection of that portion of the gland causing the dam. This, in some operators' hands, has produced excellent results. Time must pass before we will be able to definitely say to what extent it will replace older procedures of gland extirpation. Scientific medicine is very reticent in accepting any procedure without

careful proof and trial. This is the reason we, as practitioners of medicine, should be so proud of our profession, and the heritage which is ours. This is the primary reason for the existence of different cults and sects, offshoots, bastards in the regular practice of scientific medicine, branching from the parent organization and becoming in common parlance "Bolsheviki". It is because they, in their zeal and enthusiasm, do not wait for the approval and sanction of the medical profession as a whole, but decide to sell it to the gullible public regardless, in some instances, of disapproval, knowing in some cases that it will not meet the requirements. On the other hand, progress in medicine depends on research work, and pioneers are needed in advancing any new method, principle or procedure. Surely, in urological work we owe these men more than we ever can repay. To Caulk of St. Louis, Young of Baltimore, Collins, Kirwin and McCarthy of New York and Davis of North Carolina we owe much in advancing and perfecting to its present stage the technic of prostatic resection and punch.

I am sure there is much confusion at present in the terminology used. There are four general methods of electro-surgical procedure for the relief of prostatic obstruction. First, the Collins method. This destroys that portion of the gland by electro-coagulation, and this tissue sloughs away. Success in this method usually requires multiple sittings. Second, the Kirwin method. This is performed by first coagulating the obstructing tissue, and its immediate removal by a bladder neck resector. Third, Caulk, or Young punch, in which a cold or cautery punch is used to accomplish the same object. Fourth, the Davis or McCarthy method. This is by resection, and should be the only method so named. It is based on the principle of using a high frequency cutting current under water, and with this current resecting with a wire loop the offending tissue. This is a highly technical procedure; you must be at home in the posterior urethra, able to be absolutely sure of your landmarks, able to distinguish and know at all times the location of the veru-montanum and trigone with its respective position to the electrode and its traversing arc. You are using a highly potent instrument, a current which has much potential damage should it be applied to some strategic point, as the veru

or trigone. The Stern or Davis instrument uses the same type of sheath as the cautery punch; that is, the fenestra is closed at the bladder end. The McCarthy instrument is based on his original foroblique panendoscope, and has the fenestra or bladder end open.

There is, and has been, much discussion in the literature in the past few years as to the work necessary for the relief of prostatic obstruction. Caulk has steadfastly maintained, that if you establish drainage the offending edematous tissue will recede, placing his supposition on the fact that after a patient has had preliminary catheter drainage or suprapubically the prostate will recede. This is certainly true. We have been surprised to find, at operation for prostatectomy, a very small prostate after drainage had been instituted, when, before the patient was drained, there appeared a massive prostate and cystoscopically median and lateral lobes were demonstrated to be greatly enlarged. We must have time before we can come to any conclusions concerning the statements that resection, punch, or what-not will almost or entirely replace the older operative procedures of removal of the gland. Not so long ago urologists were greatly concerned over the technic of suprapubic versus perineal prostatectomy; now it is generally agreed that it depends on the operator and his familiarity with the procedure. It should be said that resection or punch should be restricted to those men who have the opportunity to continuously do them, and not by men who would do one only occasionally. Mind you, not that he could not do them, but because the patient will have better chances in the hands of one trained for this type of work. It should be remembered that a patient must have just as much preoperative preparation for a punch or resection as if you were going to enucleate the gland. It is not the operative procedures which produce the mortalities or morbidities in these old men, but it is, rather, the condition of their hearts and kidneys which has been caused by back pressure at the bladder neck.

May I draw this to a close in hoping that I have confined myself to statements which are not overly-ambiguous. I claim no priority for any of them, and if I have brought you a message of the advances in urology, and how it can assist the general practitioner, I am content.

PEDIATRICS OF THE FUTURE*

CARROLL M. POUNDERS, M.D.
OKLAHOMA CITY

No other branch of medical practice enters into and becomes so much a part of the social and home life of the commonwealth as does pediatrics. This being true, it, more than any other field of work, must be delicately attuned to the economic and emotional aspects of community existence. It was one of the last phases of medicine to be accorded recognition. While an English book on the subject (Phaers' Book on Children) appeared in 1545, it really began to be recognized as a specialty about the middle of the last century. Dr. G. F. Still, who is just retiring from hospital engagements, was named as pediatrician to King's College Hospital in 1899. This was the first time a periatrician had been appointed for any hospital in London. Up to that time, the children's ward had been under the care of a gynecologist, or the most junior member of the staff, who had the position until he was promoted to an adult ward. At the meeting of the American Medical Association at Atlantic City, in 1909, a resolution was passed which stated, among other things, that: (1) Pediatrics should be represented in the curriculum by a full professorship independent of any other chair, and (2) that the study of pediatrics should be compulsory and should be required for graduation. The extremely rapid development of this branch, from that time to the present, has been amply justified by the marked lowering of the mortality and morbidity rate among infants and young children and by the general dissemination of knowledge of feeding and nutrition and of the control of communicable diseases.

It is interesting to note how the practice of this specialty has changed within the past two decades. Papers read before the earlier pediatric gatherings dealt largely with the diagnosis and treatment of various acute ailments and with various methods of artificial feeding. It was more like the application of the general practice of medicine to infants and children. The latter were treated more like they were diminutive adults. Then infant mortality began to claim attention and child welfare and preventive pediatrics

*Chairman's Address, Section on Obstetrics and Pediatrics, Annual Meeting Oklahoma State Medical Association, Tulsa, May 21, 22, 23, 1934.

began to loom up. Studies in physiology and bio-chemistry soon put the specialty on a much higher plane than it had occupied before. Wonderful advances were made in the study of deficiency diseases, such as rickets and scurvy. Immunization against and the control of contagious diseases made unprecedented strides. Child psychology and psychiatry are now occupying the limelight. As a matter of fact, the present day practice of pediatrics is quite different from what it was twenty years ago.

Now these evolutionary changes have brought to the pediatrician certain problems and worries. It was never a very lucrative specialty as the fees were generally small compared with the amount of time and work required. It was necessary to depend upon a large volume. In the tendency towards socialization of medicine, pediatrics has gone farther than any other branch. The various child health centers, well baby clinics, child guidance clinics and such-like, have taken care of a large volume of the work. Philanthropists and legislators have tried to outdo each other in the interest of the child. The wholesale free immunization of children against communicable diseases has made great inroads into our work. Through our educational campaigns enough knowledge about preventive pediatrics, infant feeding and immunization against contagion has been disseminated among the profession generally, so that they have come to feel more able to take care of their own pediatrics. Consultations are much fewer than formerly. The obstetricians continue to look after their babies in many instances. These and many other factors have contributed to considerable change in the status of the pediatrician. One hears little that is optimistic but much of pessimism among his colleagues in this work.

Now, is this atmosphere of gloom and pessimism justified? Is there no longer any need for specialists in pediatrics? Is not our existence justified by our past accomplishments? I believe that there is just as great a field for the pediatrician today as there has ever been; in fact, much greater. I believe that we can generally blame ourselves for not keeping in step with changing conditions and making our services available to more people. We must become specialists in pediatrics and not in the diseases of children. We can no longer justify our existence by simply

trying to apply the practice of adult medicine to infancy and childhood. One does not have to be extraordinarily observing to see that there has been a great change in the type of service required of us today. While such common worries as summer diarrhea, pneumonia, pyelitis, upper respiratory infections and the like are still with us and probably will continue to be as long as we practice medicine, still they play no such prominent parts in our daily routine as they once did. Today our job consists more in supervising the feeding during the first few years so as to produce the best possible physical growth and development; of the application of the means which are at our disposal for preventing infectious diseases; and of the guiding and assisting parents in bringing up children according to the best principles of mental hygiene so that they will be efficient members of society. The thing which I mentioned last is today by far the most important of all. We have been doing a fairly satisfactory job in the field of nutrition. Most all of our infants are much above the standard tables for height and weight that were put out a few years ago. We have almost eliminated diphtheria and some of the other dread diseases—(although one must admit that there is much to be done yet in the field of preventive medicine). But we must confess that our accomplishments in the field of mental hygiene up to now are nothing to stir our pride. Children are growing up with all sorts of abnormal mental reactions and mal-adjustments that make it impossible for them to fit properly into the community and become happy, efficient members of society. That is our problem, and it is our job to set about correcting such a situation. It is far from simple and easy, but we cannot possibly shirk or sidestep it if we are going to continue to justify our existence as specialists in a particular branch of medicine.

There is one thing which, I think, has impeded our progress and prevented us from making our services available to a greater number of people. The old family doctor formerly charged only when he wrote a prescription or dosed out some powders. A patient might sit and enumerate complaints and ask questions for half a day but there would be no charge for the time. In other words, the patient paid only for what was tangible or material. This obsolete idea has been hand-

ed down and is still being used to a large extent today. Most of us are still making it a practice to charge only when we make a home call or when the child is brought to the office to be weighed, measured and prescribed for. There are numerous telephone calls for which most of us are unable to charge. Hours are spent in talking, giving advice and correcting misinformation—and there is no satisfactory basis for putting a monetary value on such services. We detect some behavior problem in the child which will put a great tax upon our time and ingenuity to correct—still we are at a loss to know how to make a proper charge for the time and energy thus spent. And so it goes; we are called upon to give our time and efforts without any very satisfactory way of charging for them.

Now, my own feeling is that our present methods of charging for our services are obsolete. I can see but one satisfactory way of doing it, and I think that we shall all eventually come around to it. That is to take care of infants and young children on a yearly basis. A reasonable charge can be made for the year's service and for this charge we can render what services are necessary. The plan during the first year can be made to include hospital visits before the baby is taken home; one or two home visits, if necessary, before the mother is able to come to the office; regular office visits at such intervals as are considered necessary; complete physical examinations at these visits; weighing, measuring and checking up on the state of nutrition; feeding supervision, formulae and directions for starting the various foods; routine laboratory tests, such as urinalyses, blood counts and hemoglobin estimations. During the second year and later, of course, there will be the immunization against infectious diseases, advice on clothing, habit formation and the like. In other words, all the needs of the child will be looked after and a reasonable charge made for the service.

If we should all institute such a procedure as this and fully acquaint our patients with the advantages it holds for them, I am sure it would become popular. Then there would be no need for the obstetrician to care for the baby for the first six weeks in order to save the people the extra expense. The cost could be modified so that people who frequent the welfare clinics could be cared for in the offices of private physicians. There would

not be such a need for behavior clinics and all the other satellites that revolve about our specialty. In other words, the pediatric needs of the community can be taken care of in the offices of the pediatricians. Where else is there a more fitting place?

1200 North Walker.

—O—

DEVELOPMENT OF KNOWLEDGE CONCERNING ROLE OF SYPHILIS IN CARDIOVASCULAR DISEASE

Lewis A. Conner, New York (Journal A. M. A., Feb. 24, 1934), in his study of the part that syphilis plays in cardiovascular disease, states that as syphilis came gradually to have more definite outlines, and especially as anatomic studies became more frequent, the association of a history, or of the external signs of syphilis with aortic aneurysm began to be noticed. He reviews and quotes some of the world literature from the sixteenth century to the present day and believes that the contribution of Welch contains almost all the essential facts relating to the etiology and pathology of syphilitic aortitis and aneurysm as they are known today. He found a characteristic lesion of the wall of the aorta, associated in most instances (66 per cent) with syphilis but in a few instances with rheumatic fever or chronic alcoholism, which preceded and was the cause of the aneurysmal dilation and which consisted of "a diseased condition of the contiguous layers of the internal and middle coats of the vessel—a tissue growth terminating in degeneration—which by impairing the elasticity and contractility of the walls, allows of their expansion and dilation under the tension of normal blood pressure, or this abnormally increased by any cause." He noted that the process began at the root of the aorta and proceeded distally and that the sinuses of Valsalva were usually involved, as were also frequently the aortic cusps. The process, he declared, might retrogress without serious damage to the system at large, but if extensive or severe was followed by one of three fatal complications—aneurysm, damage to the aortic valve or hypertrophy and dilatation of the heart. Almost the only thing lacking in his description is mention of the proneness of the aortic lesion to encroach on the mouths of the coronary arteries.

—O—

R. B. DAVIS CO. COCOMALT

Specialists in the study of child nutrition have been quick to recognize the value of milk as the mainstay of the child's diet.

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CHAIRMAN'S ADDRESS.—SECTION ON GENERAL SURGERY*

JOHN F. KUHN, M.D.
OKLAHOMA CITY

I feel the necessity of bringing to your attention, in a public manner, the seriousness of one of the most colossal frauds with which modern surgery is confronted. A fraud which is deterring the skilled surgeon from the application of his skill in the saving of life and human suffering; which is costing the lay public an immense amount of suffering and is mulcting the conscientious, skilled surgeon of his well-earned competence.

I speak of the modern racket of unwarranted suits against surgeons, in which a combination of unscrupulous doctor and lawyer is set up for the express purpose of preying upon the unwary surgeon, whose sole thought and purpose has been the welfare of his erstwhile patient.

I am sure that the legal profession, as a whole, deplors this condition just as much as the medical profession does. Their machinery for control of this situation is much less perfect, however, than is ours; therefore it seems to me that organized medicine should initiate the steps for the squelching of this menace to the life and happiness of the unsuspecting public. For in the last analysis it is the people who suffer most from the continuance of this fraudulent practice.

The internist is less exposed to these suits than is the surgeon, since the surgeon, in the practice of his art, must of necessity traumatize normal tissues in order to reach the pathological; he must, to a certain degree, produce some permanent damage to the normal. The eventual result being that the patient has a lasting impression of the harm he has suffered, and he is likely influenced by this into forgetting the seriousness of the condition for which surgical intervention was necessary, and to ascribe, finally, his imperfect restoration to complete normal, to improper surgery.

The purely medical practitioner is not confronted with these conditions, and so is less exposed to unwarranted and fraudulent suits.

The surgeon is confronted with them because the unfortunate patient can always

find a sympathetic ear in some unskilled, untrained, or fraudulently inclined surgeon, who, without knowing all of the underlying facts, and perhaps not caring to know them, stimulates in the patient a further resentment against his original surgeon instead of quieting his fears and showing him the benefit he has received—and so the case is built up.

To protect himself against this fraudulent practice, the surgeon is obliged to keep up a high-priced insurance, the fee for which is gradually growing prohibitive; and the very fact that insurance is carried stimulates, still further, the cupidity of the unscrupulous doctor and lawyer combination, their conscience (if there could possibly be any conscience left) being salved by the argument that the insurance company would pay the bill anyway, the patient's welfare receiving but scant consideration, the actuating motive being the amount of profit which will accrue from this illicit action.

Now, it appears to me that organized medicine must, without further delay, take steps to eliminate the untrained, unskilled and unscrupulous surgeon, and to cooperate with the legal fraternity in such a manner that the public may be protected from this growing racket. I believe that our own State Medical Association should finance a well-organized committee for the study of this situation from all viewpoints, and undertake to interest the State Bar Association to do likewise. In this manner, and by cooperating with them, to arrive at the proper solution which may be finally adopted as a statute for the eventual protection of the public against this growing fraud.

—o—

INCIDENCE AND PATHOGENESIS OF DEGENERATIVE ARTHRITIS

In order to gather more precise information regarding the incidence of degenerative arthritis, Chester S. Keefer and Walter K. Myers, Boston (Journal A. M. A., March 17, 1934), examined approximately 150 knee joints obtained from patients dying of a variety of diseases. Aside from the observations, they have compiled from the literature the results of anatomic studies of the joints as found at necropsy by a number of observers. From these studies they conclude that the incidence of degenerative arthritis increases with advancing age. It is more prevalent in certain occupations, when there has been injury to the joint surfaces, and when static deformities are present. The anatomic changes can be explained on a basis of injury to the cartilage and bone, which follows the wear and tear of the joint structures, and are not due to any particular disease process.

*Delivered at Annual Meeting, Oklahoma State Medical Association, Tulsa, May 21, 22, 23.

FUSO-SPIROCHETAL DISEASE*

A. S. PIPER, M.D.
ENID

In his book on epidemics, Hippocrates refers to aphthous affections of the mouth of a malignant nature, which often developed early in the spring. These infections may have been either angina or diphtheria. Aretaeus probably recognized true fuso-spirochetal angina, for he speaks of "broad, hollow, foul" ulcers of the tonsils, and says: "If the disease spreads outward to the mouth and reaches the columella and divides it asunder, extends to the tongue, the gums and the alveoli, the teeth become loosened and the inflammation seizes the neck, they die within a few days from fever, fetid smell, and want of food. But, if it spreads to the thorax by the windpipe, it occasions death by suffocation within the space of a day, for the lungs and heart can neither endure such smell, ulceration, nor ichorous discharges."

The first modern description of this disease was by Van Swieten in 1728. He observed ulcers which attacked the lips, cheeks and tonsils. These were extremely fetid and the ulcers of the tonsils were mistaken for those caused by a venereal virus and were treated, in consequence, with mercury. It was found, however, that the mercurials were not only useless as a curative agent, but actually aggravated the disease.

Our real knowledge of the oral spirochetes begins with the discovery of the microscope by Cohn, in 1875. Miller, who is justly called the father of oral bacteriology, labored for thirty-five years on the organisms found in the mouth, and his textbook is still standard. Apparently, he included all the oral spirochetes under the term "spirocheta dentium". He failed to cultivate these organisms and ventured no opinion as to their pathogenicity.

Evidence of the association of oral spirochetes with disease began to appear as early as 1867 when Leyden and Joffe found closely wound spiral forms in the lungs and sputum of cases of typical pulmonary abscess and gangrene; also progressive contraction of the trachea, and pulmonary abscess following introduction into the lungs of shreds and scrapings from the mouth.

Plaut, in 1894, described *treponema dentium* accompanied by fusiform bacilli in the lesions of hospital gangrene and angina of the pharynx. Neither Plaut, Vincent, nor any of their immediate successors were able to cultivate the oral spirochetes. Muhlens and Hartmann, in 1906, were the first to obtain pure cultures of *treponema dentium*. More recently oral spirochetes of various types have been isolated and grown in pure culture, by Noguchi, in 1912, and others.

Any organism that has a fusiform shape may be regarded as a fusiform bacillus. Miller, Plaut, Zingard, Orth, Fruhwald, and Veillon observed fusiform bacilli before Vincent, yet his insistence on their importance in disease was so constant that it is not surprising that his name is commonly associated with the fusiform bacillus.

Fusiform bacilli are found about the teeth in practically every mouth associated with the oral spirochetes. Smith found fusiform bacilli in 80 per cent of the tonsils, and Pratt identified fusiform bacilli in broth cultures from the throat in 200 consecutive patients. They have also been found in the normal intestinal tract, and about the external genitalia of both males and females. Krumwiede and Pratt isolated fusiform bacilli from noma, ulcer of the tongue, Vincent's angina, discharging ear, pyorrhea, and ulcerative gingivitis.

A controversy has raged in the literature on the question of whether the fusiform bacilli develop into spirochetes, or vice versa. Vincent favors the view that they are different forms of the same organism. Muhlens, Hartmann and others stoutly maintain that they are entirely different organisms. Sanarelli points out that fusiform bacilli are generally found near the surface of morbid processes, mixed with other bacteria, while the spirochetes are most abundant in the depth of the lesion near the normal tissue where anaerobic conditions prevail.

The first cases of ulcero-membranous angina with fusiform bacilli and spirochete infection reported in the United States were by Sobel and Herrman, in 1901. Many cases have been reported since then; however, it did not become widespread until after the World war, since which time it has become one of our major post-war problems.

In view of the conflicting claims of Plaut, Vincent, and Veillon, it would seem

Chairman's Address, Delivered Before Section on Eye, Ear, Nose and Throat, Annual Meeting Oklahoma State Medical Association, Tulsa, May 21, 22, 23.

advisable to drop the term Vincent's angina and refer to this infection as fusospirochetal disease.

Predisposing causes: When people are crowded together in large groups, as in mining camps, prisons, schools, and army camps, the infection may take on the character of a true epidemic. It has been found that these epidemics were caused by the highly standardized, strictly economical diet, such as commonly used in army camps, prisons, eleemosynary institutions, containing an insufficient amount of fresh vegetables and fruits, and consequently deficient in vitamin C. This has been proven by the subsidence of new cases when a liberal amount of milk, tomato juice, and cod liver oil was added to the diet.

Bacteriology: As stated before, fusiform bacilli and spirochetes may be found in the mouth and throat of seemingly normal patients, so it has been proven by experimentations of Smith and others that the typical necrotic, foul-smelling ulcer or abscess cannot be produced by either the fusiform bacilli or spirochetes alone, but by a symbiosis of a spirochete, a fusiform bacillus, a vibrio and a coccus, usually an anaerobic hemolytic streptococcus.

Pathology: In a typical ulcerative progressive type of the disease, one can distinguish three definite zones of involvement: First, the external necrotic layer is composed of dead tissue and masses of bacteria of all kinds, and the fusiform bacilli and spirochetes are infrequent in this area. Second, beneath this superficial zone is a zone which is only partly necrotic. The cells can be distinguished, but are damaged to varying degrees. Fusiform bacilli predominate in this zone. Spirochetes accompany the fusiform bacilli, but are not numerous. Third, in the third or innermost zone the spirochetes occur practically alone or accompanied by an occasional fusiform bacillus. The tissue cells in this area seem perfectly normal. There is no accumulation of pus cells. As the spirochetes progress into the normal tissue, the fusiform bacilli and other organisms follow until the entire tonsil or involved tissue is destroyed. This fact, that the spirochetes lead in the invasion into the normal tissue, is accepted by Zinserling as sufficient proof that the spirochete is the most important member in this symbiosis of anaerobic organisms.

Complications: Many of the milder cases, if left untreated, eventually recov-

er. The more severe ulcerative types are prone to spread to the nose or sinus, larynx, and lungs, or may be complicated by endocarditis, pyelitis, nephritis, rheumatism, arthritis, or purpura hemorrhagica, unless early vigorous treatment is given. Fatal hemorrhage, due to erosion of the carotid, has been reported by Bouty, Dickerson, Delsaux, and Cadman. The case reported by Cadman was a physician, and the angina, with subsequent fatal hemorrhage, followed a tonsillectomy. Thompson saw an extension of the process to the sphenopalatine fossa, resulting in an abscess of the brain. I had a case of arthritis of the mandibular articulation of two years' standing, who had been advised by three competent doctors and dentists to have a tonsillectomy. The patient had no discernible inflammation or ulceration of the throat. Temperature was above 100 degrees and smears from the mouth and throat were positive for fusiform bacilli and spirochetes. About two weeks' treatment, local and systemic, cleared up the temperature and also the soreness and stiffness in the submaxillary articulation. Another case, one of extensive ulceration of the hard palate area which necrosed through into the maxillary sinus, with an abscess pointing externally under the orbit, superimposed upon a syphilitic patient under intravenous neosarsphenamin treatment. This patient died, probably from a combination of the two diseases. Theoretically, from the treatment used, complications at least should have been checked, but he was undoubtedly arsenic fast, which I did not suspect at that time, about five years ago, or I should have substituted vigorous bismuth treatment.

David T. Smith reports an analysis of 1212 cases of pulmonary abscess. Three hundred thirty-eight, or 28 per cent, were found to have followed tonsillectomy. Kline, Arch. Surgery, 1929, reports that 50 per cent of the lung abscesses in children, and 90 per cent in adults, are caused by fusospirochetal organisms.

Infected material from the teeth and tonsils may be inspired into the lungs with the greatest ease. In 1922, and again in 1924, Meyerson, M. C., "Laryngoscope, 1922," bronchoscope a number of patients immediately following tonsillectomy and found blood below the vocal cords in 76 per cent. Daily, "Texas State Med. Journal, 1927," examined 100 patients after operation and found blood in the tracheobronchial tree in 78. Iglauer, "Jour-

nal Amer. Med. Ass'n, 1926," examined 50 patients after local tonsillectomy and noted blood in the trachea in 38 per cent. During the past six years all cases of bronchiectasis have been studied at the New York State Hospital for incipient tuberculosis, and fuso-spirochetes have been demonstrated in 80 per cent.

The most extensive complicated case that I have seen, with recovery, was referred to me for severe hemorrhage following a few days' illness. Examination revealed a large ulcer on the buccal surface, opposite the back molar, as well as several other smaller ones, with extension posteriorly and upward into the nose. A pyelitis was present on entry. About the fifth day an extensive endocarditis developed, involving all the valves, that looked for about ten days as though it would prove fatal.

Differential diagnosis: The most common diseases to differentiate are follicular tonsillitis, syphilis and diphtheria. Since fuso-spirochetal infection has become so prevalent I do not believe that we are giving our patient reasonable care if there is much ulceration, or some vague, unexplainable pain about the jaw or ears, unless a laboratory examination is made, and in some cases, which are negative upon first smear, which do not improve with indicated treatment, a second smear should be made, which may prove positive for the fuso-spirochetes. Also, one may find both a syphilitic and a fuso-spirochetal infection in the same patient, as I previously cited.

The following two fatal cases emphasize the advisability of a laboratory test:

CASE NO. 1

Donald, A. Age 2 years. Sick about one week, running temperature. Four days ago acted as if throat were sore, became hoarse, and difficult swallowing and breathing gradually developed. This case was diagnosed as diphtheria by the family physician and was given one dose of diphtheria antitoxin. Patient was referred for tracheotomy. At entry, temperature was 104, cyanotic, difficult respiration. Smear was negative for diphtheria but positive for fuso-spirochetes. Culture was also negative for diphtheria. A tracheotomy was performed, which relieved the breathing and cyanosis. The patient died about fifteen hours after entry, with a severe nephritis and lung oedema as complications.

CASE NO. 2

Earl S. Age 7 years, 11 months. Has had whooping cough about three weeks. Five days ago developed sore throat. Consulted family physician three days ago on account of difficult swallowing and choking up. Patient referred with a provisional diagnosis of diphtheria. On examination there was en-

tensive sloughing areas on the tonsils, palate, and epiglottis. Smear and culture were negative for diphtheria, but positive for fuso-spirochetes. Patient had paroxysms of choking accompanied by cyanosis. A tracheotomy was performed about fifteen hours after entry. A heavy, tenacious exudate was removed through the tracheotomy opening which showed fusiform bacilli and Vincent's spirillum present. Two days later an acute nephritis developed and the patient died four days after tracheotomy with extensive lung involvement.

Treatment: The milder cases can be relieved by the use of many drugs applied locally, most all of which I have used, as well as yourself, but the past few years I have depended upon 10 per cent copper sulphate, which was called to our attention in 1927 by Dr. D. D. McHenry. This, in combination with sodium per borate, has proven most satisfactory to me. However, in the more severe cases, in which ulcerations have developed, I believe it is advisable to use some systemic treatment as a study of the pathology has shown that the Vincent's spirillum have advanced deep into the seemingly healthy tissue, underneath or surrounding the ulceration, and is hard or impossible to reach with local treatment.

In cases with delayed diagnosis in which the disease has spread to the pharynx, nose, sinus, larynx, or lungs, that we have seen quite frequently the past few years, it is imperative that we use either intravenous or intramuscular medication. Smith, "Fuso-Spirochetal Diseases," advocates neoarsphenamin or sulpharsphenamin as a routine. About five years ago, after having a few unsatisfactory results with this, I began using bismuth intramuscularly, which has proven more satisfactory in my hands.

Conclusion: That this disease has become far more prevalent the past few years and the milder chronic cases are often overlooked.

That any unexplained pain about the ears, face, mouth or throat, accompanied by a slight temperature, should have a laboratory test made for fuso-spirochete infection.

That all cases of suspected diphtheria should have a smear made and checked for fuso-spirochetes as these organisms will not grow on the ordinary culture media.

That this infection, in the majority of cases, starts primarily in the mouth and throat, and we, as specialists, should make an early diagnosis, institute vigorous

treatment, and prevent the serious constitutional complications that are prone to follow.

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McHenry, D. D.: Vincent's Disease, Oklahoma State Medical Journal, August, 1927.
Gill, William D.: Vincent's Infection. State Medical Association of Texas, May, 1932.

SUMMER DIARRHEA IN BABIES

Casec (calcium caseinate), which is almost wholly a combination of protein and calcium, offers a quickly effective method of treating all types of diarrhea, both in bottle-fed and breast-fed infants. For the former, the carbohydrate is temporarily omitted from the 24-hour formula and replaced with 8 level tablespoonfuls of Casec. Within a day or two the diarrhea will usually be arrested, and carbohydrate in the form of Dextri-Maltose may safely be added to the formula and the Casec gradually eliminated. Three to six tablespoonfuls of a thin paste of Casec and water, given before each nursing, is well indicated for loose stools in breast-fed babies. Please send for samples to Mead Johnson & Company, Evansville, Indiana.

SEMEN APPRAISAL: DIFFERENTIAL STAIN THAT ADVANCES THE STUDY OF CELL MORPHOLOGY

William H. Cary and Robert S. Hotchkiss, New York (Journal A. M. A., Feb. 24, 1934), endeavor to simplify and clarify the essential features of semen examination with special regard to defective spermatogenesis in otherwise healthy men. A new method of fixing and staining a microscopic specimen is detailed, which differentiates component parts of the cell without distorting the protoplasm and enables any physician familiar with the use of the oil immersion lens to recognize and classify abnormal sperm cells, and, in specimens of doubtful character, to count the percentage of these cells as an added index of deficiency or improvement. Such a contribution seems indicated, for, while the profession and also the public now recognize the potential responsibility assumed by the husband in an involuntarily childless marriage, there is convincing evidence that the more thorough study necessary for properly appraising male reproductive vigor is still unappreciated or not believed and thus incorrect diagnoses are frequent and much useless gynecologic surgery continues. Not only are urologic and endocrinologic reviews relative to male fertility commonly neglected, but the examination of the semen, the chief clinical evidence of fecundity, receives but the most elemental consideration. The authors do not aim to define an illusory point at which a male specimen may be said to be fertilizing or nonfertilizing, but strive to give the practical evidence by which semen deficiency may be estimated, errors in diagnosis reduced, and the necessity for improving the husband as an important factor in the treatment of involuntary sterility recognized. The importance of semen subnormality as an element in the sterile union may not be determined by this evidence alone but by the facts elicited in a complementary study of all factors affecting fertility in the husband and wife.

SIMULTANEOUS, BILATERAL SPONTANEOUS PNEUMOTHORAX: REPORT OF CASE, WITH BRIEF DISCUSSION OF THE LITERATURE

D. E. Markson and Warren Johnson, Chicago (Journal A. M. A., March 17, 1934), present a case in which the sudden onset of the disease in an apparently healthy youth, the afebrile course without complicating seropneumothorax or pyopneumothorax, the negative roentgenographic evidence of tuberculosis, as well as the absence of tubercle bacilli in the sputum either by direct smear or after concentration and digestion, and the absence of changes in a guinea-pig injected intraperitoneally, together with the rapid, uneventful recovery of the patient, clearly establish the diagnosis of a simultaneous, bilateral spontaneous pneumothorax simplex. The authors believe that in their patient the pneumothorax undoubtedly occurred on the left side first and became bilateral in from four to six hours. The prognosis for apparently healthy patients with pneumothorax is good, and this is a characteristic feature of the disease. Kjaergaard's forty-nine patients with unilateral spontaneous pneumothorax have lived from three and one-half to twenty years. In one case, tuberculosis developed about three years after a unilateral pneumothorax, but this was considered a purely accidental infection. In bilateral cases, however, there is danger of suffocation, and immediate attention is needed. Permanent aspiration by a water or electric suction pump may have to be instituted when the ordinary procedure fails. It is worthy of emphasis that these patients do not need institutional after-care, as recovery is rapid and spontaneous.

SPONTANEOUS RENO-INGUINAL FISTULA

Abraham Ravich and Perry Katzen, Brooklyn (Journal A. M. A., March 17, 1934), state that spontaneous renal fistula has become a distinct rarity since the advent of modern urology, only four cases having been reported during the past thirty years. Nephrolithiasis is the most common etiologic factor. The fistula always begins as a perforation through the kidney parenchyma, causing extravasation of urine and pus, which either gradually finds its way into some viscus or presents itself subcutaneously. The authors cite a case which they believe is the only one reported of spontaneous reno-inguinal fistula with nephrolithiasis as the causative factor, the only other case similar to it presenting tuberculosis as a concomitant lesion. The case under discussion first came under observation at the hospital for a swelling in the right groin. Roentgen examination revealed a right nephrolithiasis which was at first considered incidental. However, when after incision and persistent drainage for fifteen months the fistula was outlined with iodized oil, it was found to communicate directly with a perforation in the right kidney, which was filled with a large coral shaped calculus. The patient was then admitted to the urologic service of the hospital and at operation a densely adherent kidney filled with a friable stag horn calculus was found. The latter had perforated through the kidney cortex and capsule and by extravasation had caused such a cartilaginous-like perinephritis that intracapsular nephrectomy was considered the only safe procedure. The sinus did not close completely until seven months after nephrectomy, owing to the large amount of perinephric tissue necessarily left behind. Uneventful recovery, however, was the end result.



PRESIDENT 1934-35

LEROY LONG, M.D., F.A.C.S.

Born, North Carolina, 1869

Graduated from Louisville Medical College, Kentucky, 1893.

Made Dean of the Oklahoma Medical School, University of Oklahoma, 1915,
serving in this capacity and as Professor of Surgery continuously until
1932; is now associated with his sons LeRoy Downing and
Wendell Long, in the LeRoy Long Clinic,
Oklahoma City

THE JOURNAL

OF THE

Oklahoma State Medical Association

Issued Monthly at McAlester, Oklahoma, under
direction of the Council

VOL. XXVII JUNE, 1934. No. 6

DR. L. S. WILLOUR..... Editor-in-Chief
McAlester, Oklahoma.

DR. P. P. NESBITT..... Associate Editor
Medical Arts Building, Tulsa, Okla.

Entered at the Post Office at Muskogee, Oklahoma,
as second-class mail matter July 28, 1912.

This is the official Journal of the Oklahoma State Medical Association. All communications should be addressed to The Journal of the Oklahoma State Medical Association, 203 Ainsworth Building, McAlester, Oklahoma. \$4.00 per year; 40c per copy.

The editorial department is not responsible for the opinions expressed in the original articles of contributors.

Reprints of original articles will be supplied at actual cost provided requests for them is attached to manuscripts or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, 203 Ainsworth Building, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application.

It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

PRINTED BY HOFFMAN-SPEED PRINTING CO., MUSKOGEE

EDITORIAL

THE ANNUAL SESSION

The forty-second annual meeting of the Oklahoma State Medical Association, which was held in Tulsa, appears to have been a complete success in every way. The perfect organization of the program was largely due to the excellent services rendered by Dr. A. W. Pigford, general chairman, and his corps of sub-committeemen. All meeting places were in readiness at the time of the sessions, such details as projectors, screens, blackboards, etc., were on hand, and no one was required to wait for lack of proper arrangements and equipment.

Our guest speakers, Doctors Balfour, Marriott, and Helwig, presented material

much appreciated by their audiences, and we wish to most sincerely thank them for their contributions. It was, of course, regrettable that Colonel Craig could not be present, the serious illness of his wife making it impossible.

As expected, the Tulsa County Medical Society furnished most excellent entertainment, and if anybody in attendance failed to have an enjoyable time it was certainly his own fault, as the host doctors provided everything to make it a most enjoyable occasion.

We wish to announce that the registration was five hundred and seventy-five, which was the largest attendance we have had in many years, and we only hope that every physician who attended may feel that his time was well spent and will begin now to make his arrangements to attend our meeting next year in Oklahoma City.

Dr. Louis H. Ritzhaupt, Guthrie, was elected president of the state Association for 1935-36, and Oklahoma City was chosen as the meeting place for 1935.

Doctor O. E. Templin, Alva, was re-elected councilor for the first district; Doctors W. Albert Cook, Tulsa, and Horace Reed, were re-elected delegates to the American Medical Association for two years.

The minutes of the house of delegates will be published in the July issue of the Journal as the material was quite voluminous and it seemed impractical to abstract it and still get the June Journal out on time.

THE BELOVED PHYSICIAN

Could there be a name that would reflect more good in a member of the medical profession than the above title? To be a beloved physician several attributes are necessary—kindness, unselfishness, high ethical ideals, professional skill, high standard of morals—all are requisite to entitle a physician to this prefix "beloved".

Luke, the beloved physician, was a man of learning, not only in his profession but a man of letters. His professional ability was recognized by Paul when he made him his personal physician. Paul was not of the rugged type and Dr. Luke accompanied him on his various missionary journeys that he might advise him as to his physical care while he (Paul) used

his wonderful powers in the advancement of the cause to which he had dedicated his life. This was an early example of the efficacy of the combined strength of the ministerial and medical professions, and is today being carried out in the organization of practically all missionary work.

As to Dr. Luke's literary ability, all readers of his historical treatise in the book of Acts can testify. He has been read after by more people than any other physician, and the lessons to be learned by reading the works of this physician and author can be used to the advantage of any medical man in his everyday work.

All physicians may not agree as to his Christian doctrines, but none can dispute the wonderful lesson to be learned from his parable of the Good Samaritan, be he Jew or Gentile.

REPORT OF COMMITTEE ON NECROLOGY

The following report of the Committee on Necrology was presented before the General Session, Wednesday, May 23rd:

WHEREAS, it has pleased Almighty God to remove from our membership the following members of our Association since our last meeting:

Howard Banks Ames, Alva.
J. V. Anderson, Fairview.
W. D. Atkins, Holdenville.
David Autry, Marietta.
J. T. Barnwell, Graham.
R. J. Barritt, Pawhuska.
W. H. Black, Kansas City, Mo.
A. L. Blesh, Oklahoma City.
A. P. Brown, Davis.
O. C. Butler, Seminole.
J. H. Cameron, Healdton.
T. S. Chapman, McAlester.
F. R. Dolson, Nowata.
P. G. Dunlap, Lawton.
G. W. Goss, Pawhuska.
Ross Grosshart, Tulsa.
R. H. Hannah, Prague.
W. E. Harrington, Depew.
A. R. Haven, Blackwell.
A. L. Hazen, Newkirk.
H. C. Isles, Prague.
Emmett Johnson, Kinta.
J. A. Jones, Tonkawa.
Lambert Kuntz, Perry.
W. H. Langston, Orlando, Fla.
W. P. Lipscomb, Ponca City.
C. A. McClelland, Miami.
S. E. Mitchell, Muskogee.
R. E. Runkle, Oklahoma City.
Paul Sanger, Drumright.
W. P. Willis, Commerce.
C. E. Wilson, Boise City.

Claude A. Thompson, Muskogee, who served as Secretary-Treasurer-Editor of the Oklahoma State Medical Association from May, 1909, to October 2, 1933, or more than twenty-four years, a record of the longest service of any man in such position in

the United States, which in itself speaks for capabilities and faithfulness. No greater words could be befitting this man than those of our incoming President, Dr. LeRoy Long's oration at his funeral, which appeared in the October, 1933, Journal.

AND WHEREAS, they will be missed in their respective communities in rendering the unselfish service for which every true follower of the art is noted, as well as in all social and community activities;

AND WHEREAS, the greatest loss will be to their individual families;

BE IT THEREFORE RESOLVED, that we humbly bow to the dictates of the Great Physician, who does all things well, in the calling of these brothers from their respective fields of earthly activities, and that we should try to emulate their examples in the doing of good, relief of pain and saving of life to which they consecrated their life's work and best efforts while living among us;

BE IT FURTHER RESOLVED, that a copy of these resolutions be mailed to each of their respective families and also spread upon the minutes of this association and published in the Oklahoma State Medical Journal.

ELLIS LAMB, Chairman
W. A. TOLLESON
J. A. HATCHETT

ERRORS IN MAY JOURNAL

In the report of the Committee on Tuberculosis the name of Dr. R. M. Shepard, Tulsa, was omitted, as a member signing the report.

THE EDITOR.

We have learned that transposition of some sections was made by help in our bindery department in the collating of the May Journal. We regret this exceedingly, and are quite certain the transpositions did not occur through wilful carelessness, nor extend to many copies. Close and careful attention to details leave small chance for errors in our plant, yet, occasionally they do occur in the best of regulated institutions.

THE PUBLISHER.

Editorial Notes—Personal and General

DR. O. E. WELBORN, Ada, has been elected to the office of health officer.

DR. O. W. STARR, Drumright, attended post-graduate courses in St. Louis, in May.

DR. and MRS. W. J. WHITAKER, Pryor, are vacationing in Alabama and Virginia.

DR. and MRS. E. HALSELL FITE, Muskogee, spent two weeks in May in Charlottesville, Va., and Atlantic City, N. J.

DR. R. M. SHEPARD, Tulsa, attended the annual convention of the National Tuberculosis Association which met in Cincinnati in May.

DR. and MRS. BEN H. COOLEY, Norman, spent a week in Chicago in April, where Dr. Cooley attended the American College of Physicians.

DOCTORS D. M. GORDON and C. W. ARREND-ELL, Ponca City, attended the meeting of the American College of Physicians, in Chicago, in April.

DR. H. K. SPEED, Sayre, was elected to the office of Rotary club governor for the Western Oklahoma district, at their recent meeting in Bartlesville.

DR. L. C. KUYRKENDALL, McAlester, was elected district governor of the Lion's clubs of Eastern Oklahoma at their convention held at Stillwater, in May.

DR. ANSON L. CLARK, formerly of the Urological Section of the Mayo Clinic, Rochester, is now associated with Dr. W. J. Wallace, Medical Arts building, Oklahoma City.

DR. LEA A. RIELY, Oklahoma City, attended the annual meeting of the Texas Medical Association, which met at San Antonio, May 15-17, 1934. Dr. Riely was a guest speaker before the General Meeting, his subject being "Diabetic Problems."

DR. and MRS. WILLIS K. WEST, Oklahoma City, were in Montreal, Canada, for the meeting of the International Society for Crippled Children, in May. They sailed for Europe the latter part of May and will visit in England, France, Scotland, and Switzerland, returning about the first of August.

DR. CHARLES R. HUME, Anadarko, one of the few '89ers left, celebrated Sunday, May 20th, the staking out of a claim at the original opening of Oklahoma, forty-five years ago.

Dr. Hume was President of the Oklahoma State Medical Association in 1916, and has been secretary of the Caddo County Medical Society for twenty-two years, having been a member of the Oklahoma Territory and state society since soon after its organization.

News of the County Medical Societies

MUSKOGEE-SEBASTIAN (Arkansas) COUNTY MEDICAL SOCIETIES met in joint session at the Oklahoma Baptist Hospital, Muskogee, in May. Dinner was served at the hospital and the following program was presented by Sebastian County:

"The Decline of Prescription Writing," C. K. Kennedy, Fort Smith; "Some Points in The Management of Labor," C. B. Billingsley, Fort Smith; "Unusual Malignancies About the Face," D. W. Golstein, Fort Smith.

GRADY COUNTY MEDICAL SOCIETY met at Enid, May 4th. Following dinner the following program was presented:

"Carcinoma of the Cervix," Dr. Paul Champlin,

who has recently returned from New York where he has been engaged in cancer research work.

Dr. D. S. Downey, Chickasha, discussed this paper.

"The Kidney," was presented by Dr. O. R. Gregg; discussion by Dr. Don Branham, Wesley Hospital, Oklahoma City, and Dr. A. L. Clark, formerly of the Mayo Clinic.

JACKSON COUNTY MEDICAL SOCIETY met May 25th and presented the following program:

"Hygiene and Management of Pregnancy," Dr. L. H. McConnell, Altus; "Nausea and Vomiting," Dr. Jesse Bird, Eldorado; "Eclampsia," Dr. R. Z. Taylor, Blair; "Abortion," Dr. J. S. Stults, Altus; "Ectopic Gestation," Dr. E. W. Mabry, Altus; "Management of Normal Labor," Dr. Knox Collier, Tipton; "Placenta Previa," Dr. John Allgood, Altus; "Breech Presentation," Dr. R. H. Fox, Altus; "Caesarean Section," Dr. R. H. Fox, Altus; "Uterine Inertia," Dr. W. T. Ray, Gould; "Forceps Delivery," Dr. W. P. Rudell, Altus; "Lacerations," Dr. R. F. Brown, Altus; "Ophthalmia Neonatorum," Dr. E. A. Abernathy, Altus; "Management of the Newborn," Dr. John Allgood, Altus.

ANNOUNCEMENT

The Gynecean Hospital Institute of Gynecologic Research of the University of Pennsylvania, is conducting an intensive study of families into which congenitally malformed individuals have been born.

Special interest centers in families in which malformations have appeared in two or more children. Physicians who have knowledge of any such families are urged to communicate with Dr. Douglas P. Murphy, Gynecean Hospital Institute, University of Pennsylvania, Philadelphia, Pa.

THE STATE SECRETARY'S OFFICE has received notice from the office of Dr. J. M. Bynum, Secretary of State Board of Medical Examiners that the following have had their license revoked:

Dr. J. M. Thompson, Walters, suspended for a period of five years, during which time he cannot legally practice medicine in Oklahoma.

Dr. W. F. Griffin, Watonga, suspended for a period of one year, dating from March 13th, 1934, during which time he cannot practice in Oklahoma.

Dr. R. E. Thacker, Oklahoma City, license revoked permanently.

RESOLUTION

Whereas, we are left to mourn the loss of our fellow member, Dr. Ross Grosshart, who answered the call of the Great Physician, April 15, 1934; and

Whereas, in Dr. Grosshart's death this staff has lost a capable, conscientious, fearless and loyal member; therefore

Be It Resolved by the staff of St. John's Hospital that we hereby express our feeling of regret and loss in Dr. Grosshart's death; and

Be It Further Resolved, that these resolutions be spread upon the minutes of this staff and that a copy be sent to the members of Dr. Grosshart's family.

C. C. HOKE, M.D.,
F. L. FLACK, M.D.,
Committee.

ABSTRACTS « REVIEWS « COMMENTS AND CORRESPONDENCE

EYE, EAR, NOSE and THROAT

Edited by Marvin D. Henley, M.D.
911 Medical Arts Bldg., Tulsa

Optic Neuromyelitis. Richard A. Perritt, M. D.,
Chicago. *Archives of Ophthalmology*, March, 1934.

Optic neuromyelitis is a rare disease, known for only the past quarter of a century. Records of only about fifty cases are found, five of which are in English. The author gives a historical review of the various men and dates and when contributions were made in regard to this comparatively new disease. Devich, in 1894, is given credit for the name. From the clinical aspect this is an acute or subacute bilateral optic neuritis with subsequent myelitis. The only information that the ophthalmoscope sometimes gives is that there is present a retrobulbar neuritis. There is a more or less intense optic neuritis sometimes with small hemorrhages on the papillary border and light turbidity in the macular region. The neuritis may be followed by complete blindness or only impairment of vision with restriction of the visual field for white and for colors and occasionally with central scotomas. Return of vision is always slow, but occurs in about fifty to sixty per cent of cases. Vision is rapidly impaired within twenty-four hours to a few days, often to complete suppression of perception of light. Blindness is usually complete and remains so from days to months. Paralysis of ocular muscles have occurred in some cases. There are usually no external signs and the acute form is the most frequent. Orbital pain is a fairly constant symptom which is aggravated by ocular movements or digital pressure. Light perception first returns and then visual acuity improves to normal or nearly normal unless the patient succumbs to the coexisting myelitis. The myelitis may be entirely independent of the ocular condition. The optic neuritis may be improving while the myelitis becomes progressively worse. In about seventy-five per cent of the cases neuritis first appeared and in the remaining neuritis and myelitis occurred at the same time. The neuritis may recur before the myelitis has disappeared. After the neuritis has become evident the onset of the myelitis is from twelve hours to as long as eighty-one days, as reported in one case. Defects found in the visual fields are: temporal hemianopia, central scotoma or central scotoma combined with concentric narrowing. Scotoma may be absolute or relative. Perimetry shows defects for green and red.

Some of the diseases associated with neuromyelitis are: syphilis, nephritis, malaria, alcoholism, tuberculosis and neurodiathesis. There has been no positive proof to support the different theories as to the etiology. The extraordinary feature is that the majority of cases occur in persons who are apparently in perfect health.

Microscopically there is an infiltration of leukocytes in all layers of the optic nerve. The optic tracts show degeneration, fatty infiltration and neuroglia tissue. Sometimes all parts of the nerve are

involved, sometimes the central portion and other times only an isolated part of the nerve is injured. Therapeutic measures consist of the administration of mercurial preparations, iodides, salicylates, strychnine, foreign protein therapy, electrical therapy and shaded lens for photophobia, if present. The author mentions that many of the European reports of optic neuromyelitis resemble multiple sclerosis with an associated retrobulbar neuritis. He says the latter has a chronic course, and while the visual defects may come on acutely and subside rapidly, the disease is prone to recur and leave permanent damage. In optic neuromyelitis, the course is very acute, ending in either death or in practically complete recovery from both general and visual changes.

Bacteremia of Otitic Origin, Routes of Infection to the Blood Stream; Case Report With Recovery.
Dr. Samuel D. Greenfield, Brooklyn, *The Laryngoscope*, August, 1933.

Six known routes are given by which an infection may travel from the ear to the blood stream: (1) by direct extension of the suppurative process from the middle ear, through the mastoid cells by continuity, to some portion of the lateral sinus and thence to the general circulation; (2) by direct extension of the infection through the floor of the middle ear to the jugular bulb and thus to the blood stream; (3) by primary involvement of the mastoid emissary vein; (4) by following upon a thrombosis of the inferior petrosal sinus; (5) by primary involvement of the superior petrosal sinus, and (6) through other diverse channels leading from the mastoid cavity which heretofore have gone undetermined, such as anatomical anomalies and following the course of the normal preformed body openings of the diploic vessels, the emissary venules and, lastly, the lymphatic system. In the case reported Greenfield stresses the point that the blood stream infection did not occur in any of the above-mentioned ways and due to that fact the patient recovered and post-mortem evidence could not be taken into consideration the route of infection remained undetermined.

The child presented a previously operated left mastoid and an acute otitis media of both ears. Roentgenograms did not show definitely which ear was causing the chills, septic temperature and positive blood culture for streptococcus haemolyticus. The white blood count was not alarming, being only 11,000 with 65 per cent polymorphonuclears. Otoscopic examination of both ears was practically negative except for a scanty discharge and a small perforation in each drum membrane. There was no tenderness over either mastoid region and the previously operated mastoid was completely healed with no external evidence of infection. The author states that the problem was to determine which was the offending mastoid, but does not tell by what process of reasoning it was determined to first re-open the previously operated left mastoid. When the wound was opened the mastoid cavity was found to be filled with thick creamy pus which cultured pure streptococcus haemolyticus. The sinus and dural plates appeared normal. The right mastoid was next opened

and the cells showed no softening. The sinus and dural plates appeared healthy and were not disturbed. Immediately upon liberating the pus and draining the mastoid process the blood culture became negative and the temperature remained down. A blood transfusion was given the day after operation and the patient proceeded to an uneventful recovery and about two months later the post-auricular wound was completely healed and the ears were free from any discharge.

This report is corroborative evidence that it is fairly certain there are pathways which may carry infection from the mastoid cavity directly to the blood stream without intermediate involvement of any large venous tributary. This manuscript includes a complete personal previous history, detailed history of the present illness, physical findings, laboratory findings, operation and condition of the patient from day to day.

Hypertonic Muscles of the Neck As a Cause of Headache. William Mithoefer, M. D., Cincinnati. *Annals of Otolaryngology and Rhinology*, March, 1934.

Muscles of the neck are many times not given the consideration they deserve in headache, which is one of the chief complaints registered by patients who seek relief from the otolaryngologist. If the changes in the muscles are caused by infection in the teeth, tonsils or nasal accessory sinuses, a cure is obtained by removal of the infections, but if caused by some constitutional derangement, the headache is not so easily eliminated.

Constant bending over, long car rides, nervous excitement, worry and eye strain will bring on attacks, and in women, before or during menstrual periods. Myalgia, indurated headache, nodular headache, muscular headache and muscular rheumatism are some of the descriptive names used; however, a satisfactory explanation of the true nature of the affection has not been reached. The pain generally starts in the occipital region and may extend backward through the shoulders and over the head to the frontal region. Many times the headache is present on awakening and frequently is worse when one has had more than the usual amount of sleep.

Vertigo and vomiting caused by the irritation of the nerve endings of the auricular branch of the vagus as it passes through the hypertonic sterno-cleido-mastoid muscle and earache caused from irritation of the temporal branches of the auriculo-temporal nerve which sends branches to the auricle and external auditory canal may be two very important symptoms. Whether tinnitus is caused by an irritation of the auriculo-temporal nerve or by persistent pull on the auricle by the small muscles of the ear is hard to ascertain, but it is easily seen that structural changes in the muscles may cause irritation and become hypertonic, bringing about a headache. Joints as well as muscles may be affected by potential arthritis. The joints most frequently involved are the sternoclavicular, acromioclavicular and the cervical vertebrae, while the muscles commonly involved are the sterno-cleido-mastoid, the trapezius and the *sclerus capitis*. The nerves and the muscles are so intimately associated that it is difficult to determine whether the headache results from a true muscular pain or whether it is due to nerve involvement. It is therefore possible for occipital nerve irritation to produce a trifacial nerve pain because of the innervation of the sternomastoid muscle.

This condition of the sternomastoid presents a fine point in differential diagnosis between hypertonia

and operative mastoid in the presence of a chronically discharging ear. When examining a patient suffering with hypertonic neck muscles he is placed in a position which affords the greatest degree of relaxation to the group of muscles concerned. Hypertonic muscles of the neck are most successfully treated by massage, which will generally relieve mild cases in a few treatments, with chronic cases requiring twenty to thirty treatments before apparent benefit is noticed. In every case a routine method of massage should be used and this is given in detail by Mithoefer. The application of infra red heat (from 45-60 minutes) in connection with massage has proved advantageous. Occasionally a patient will have sore spots in the muscles in other parts of the body which may be caused by lack of exercise or improper diet. Exercise in the form of walking is given, free elimination, sweat baths, meatless diet and drinking a large amount of water is prescribed. Atophan is a valuable drug in some cases and the administration of thyroid and ovarian extract is also used.

Calculi in the Submaxillary and Sublingual Glands and Their Ducts. Edward F. Ziegelman, M. D., San Francisco. *Archives of Otolaryngology*, March, 1934.

In this review the author recapitulates and analyzes many previous publications on this subject. Up to about ten years ago there were reported some four hundred cases in the literature and many additional ones have been reported since. There have been cases reported where many calculi have been found but there are usually present only one or two. Some reasons for removing the submaxillary gland are that: (1) a recurrent calculus in Wharton's duct often signifies the presence of still other calculi in the gland; (2) that there is a definite relationship between the acute inflammation of the submaxillary gland and Ludwig's angina; (3) a negative roentgenogram does not rule out the presence of a stone, and (4) the scar resulting from the removal of the gland can be made practically invisible. The most prominent symptoms, according to Ziegelman, are swelling and pain, although one series of cases report that the repeated exacerbation of an acute infection is a more prominent symptom than that of pain.

Some of the theories as to the etiology are: Inflammatory lesions of the gland proper, epithelial debris in the smaller ducts serving as a nucleus, a central mass of bacteria, the ray fungus being the prime causative agent, persons having salivary calculi possess a so-called endocrine characteristic, actinomycosis, possibility of parathyroidal dysfunction, improper calcium metabolism, thyroid and pancreatic dysfunction and that the calculus is due to the precipitation of the constituents of the parotid secretion caused by some unknown alteration in the reaction of the gland.

Chemically, salivary calculi have been found to be composed of calcium carbonate and phosphate. The treatment depends upon the symptoms in each individual case; surgery is not always necessary. Some authorities claim that the differential diagnosis is the most important point in the consideration of this matter. The differential diagnosis includes cancer of the floor of the mouth, submaxillary lymphadenitis, actinomycosis, carcinoma of the mixed type and the specific granulomas, especially tuberculosis and syphilis. In contradistinction to some who consider probing the duct a dangerous procedure, the author thinks that this is sufficient treatment in many cases.

It is mandatory that the operator have a ready

knowledge of the complicated anatomy of the floor of the mouth. The lingual and hypoglossal nerves and the submaxillary ganglion must be carefully protected. Traumatism of this ganglion will produce profound surgical shock. Both local and general anaesthesia are employed but the general anaesthesia is preferable since you have the patient under absolute control and any emergency such as a hemorrhage can be easily controlled. A salivary fistula is one of the untoward results which may occur following operative procedures. In his summary and conclusion Ziegelman emphasizes the importance of a correct diagnosis in these conditions, especially when physical intervention is contemplated and required.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D.
717 North Robinson Street, Oklahoma City.

Human Tuberculosis of Bovine Origin. Wm. G. Savage. *British Med. J.*, Vol. II, p. 905—1933.

Savage delivered the Mitchell lecture on the above subject before the Royal College of Physicians of London. This is an excellent and thoughtful review of the whole situation insofar as it concerns Great Britain.

The incident of the bovine infection is established by a great volume of statistics from many workers. The distribution of the disease by age and by organs is also based upon numerous statistical figures. The portal of entry is almost exclusively alimentary, although a few cases of bovine pulmonary tuberculosis are almost certainly air-borne (dust infection in dairy workers). The incident of tuberculosis in cattle in Great Britain is excessively high, averaging forty per cent.

The author discusses at length, and with perspicuity, the measures necessary to prevent bovine tuberculosis in human beings. Chief reliance must be placed on pasteurization of milk, but, at the same time, some plan should be adopted to weed out tuberculous cattle.

This article is sound and deserves the thoughtful consideration of every person interested in tuberculosis.

Treatment of Compound Fractures of the Tibia. A. Simpson-Smith. *British Med. J.*, Vol. II, p. 1019—1933.

For the treatment of compound fractures of the tibia, Simpson-Smith recommends, in addition to the usual debridement, fixation of the fragments in accurate relationship to one another by means of a special clamp which protrudes from the wound while sterile plaster is being applied. After the plaster is set, the wound is exposed, the clamp removed and the wound sutured. This report is based upon the records of twenty cases. The instrument and the operation are illustrated.

Fractures Du Tiers Inferieur Des Os De L'Avant-Bras Traitees Par L'Immobilisation Platee. (Fractures of the Lower Third of the Bones of the Forearm Treated by Plaster-of-Paris Immobilization.) R. Soeur. *Rev. de Path. et de Physiol. de Travail*, IX, June, 1932.

The author describes a modified Bohler treatment of reduction of fractures of the forearm. He advo-

cates local anaesthesia. The reduction is performed without an assistant, countertraction is secured with a strap attached to the wall. To correct the deformity, plain horizontal traction or traction with flexion or extension, according to the displacement of the fragments, is applied. As soon as the deformity is corrected, horizontal traction is maintained while the plaster-of-Paris is applied to the bare skin. Before the plaster hardens, the hand is put in slight dorsiflexion to secure physiological relaxation of the muscles of the forearm. The patient is permitted to use his hand on the day of the application of the plaster. Six cases thus treated, with uniformly good end results, are described.

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
LeRoy Long Clinic
714 Medical Arts Bldg., Oklahoma City

Liver Deaths and Their Prevention. How the Danger Can Be Recognized and Avoided by Use of Preoperative and Postoperative Diagnostic Measures. Samuel Weiss, M. D., New York. *American Journal of Surgery*, Vol. XXIII, No. 1, January, 1934.

For many years it has been recognized by surgeons that the deeply jaundiced patient is a poor surgical risk, chiefly because such patients show a tendency to hemorrhage. It has been found, however, that the degree and duration of jaundice is not always an indication of whether a patient will bleed or not.

The liver may be damaged and its function more or less deficient in cases where there is no jaundice. This is especially true in gall-bladder disease. Recent investigation has shown that there is practically always some pathological change in the liver in cases of gall-bladder disease, even if there is no chemically evident biliary stasis or jaundice.

A number of cases of "liver death" have been described in apparently good operative risks. Death occurred after operation following a characteristic clinical syndrome with rapid rise of temperature, increased pulse rate and terminal signs of renal failure and uremia.

The liver has many functions besides the secretion and excretion of bile. It plays an important role in protein and carbohydrate metabolism and in blood coagulation, and has also a definite detoxifying action. Damage to the liver appears to result in the formation of toxic products, which are thought by Helwig and Schutz to be the cause of renal failure in the so-called "liver deaths".

Recent experiments by Andrews and others show that liver autolysis causes an "autolytic peritonitis" due to a toxic agent which is apparently an albumose. This condition is characterized by a diminution in blood plasma volume and the accumulation of free fluid in the peritoneal cavity.

Because of the liver's close relation to the sympathetic nervous system any damage to this organ may result in a variety of vasomotor and other vagosympathetic nervous disturbances. Cardiac disturbances, myocardial weakness and anginal attacks not infrequently associated with gall-bladder disease are directly traceable to the liver cells. This is evidenced clinically by signs of portal engorgement followed

by interference with the general circulation and finally dilation of the right heart.

The surgical complications and postoperative deaths due to hepatic insufficiency have been studied chiefly in connection with biliary tract surgery.

Granted that it is of importance for the surgeon to determine the state of the hepatic function before operation and to guard against postoperative complications that could not otherwise be foreseen, how is this to be done?

Many liver function tests have been proposed and none have been found entirely satisfactory.

The van den Bergh test and the icterus index, both widely used to determine the bilirubin content of the serum, relate only to bile metabolism. Of these two tests, the determination of the icterus index is the simpler and this is a relatively accurate method. A modification of these methods of determining bilirubin retention has been proposed by Harrop and Barron of Johns Hopkins Hospital.

In 1931 Lichtman described a new test of liver function based on the oxidation of cinchophen.

Of all the laboratory tests available for liver function the author has found these tests by Harrop and Barron and by Lichtman to be the most reliable in estimating the functional capacity of slightly damaged livers. He feels, however, that no liver functional test can take the place of careful clinical observation. He suggests the following as valuable diagnostic signs of mild hepatic insufficiency:

1. The violet ink test—by tracing a line with ink on the anterior surface of the wrist, the yellowish tinge of the surrounding skin becomes apparent by contrast.
2. Stiffness of the articulations, especially of the hands and the nape of the neck.
3. Visual disturbances, amblyopia or transient hypermetropia in the early morning.
4. Inability to remain in a close atmosphere.
5. Appearance in the morning of red spots on the skin after rubbing with a towel.

One of these, or all of these signs enumerated above, may attract attention. But for all others, especially obese and plethoric patients, heavy eaters and drinkers, palpation of the lower border of the liver should be carried out either with the thumb alone or with the ball of the fingers hooked over the border of the liver. The patient should stand and lean over. In this position the liver is more easily felt and is found to project beyond the ribs and to be more or less tender on palpation. Another interesting observation of the author is that patients with hepatic insufficiency have at times a particular sensitiveness to thermal treatments even when they are carefully carried out.

In cases where the clinical findings or the history indicate a possibility of hepatic insufficiency, one or more of the functional tests just described should be employed. By combining the clinical examination and the laboratory tests even mild hepatic insufficiency may be detected, and any danger from such insufficiency in surgical cases may be avoided by suitable preoperative and postoperative measures.

In the treatment of liver dysfunction, the administration of large amounts of carbohydrate is of special importance. Building up the glycogen stores of the liver hastens repair of liver damage.

While insulin has been used abroad as a supplement to carbohydrate therapy in liver disease, Al-

thausen has found that in experimentally injured livers the addition of insulin to dextrose does not increase the glycogen of the liver, but tends to have the opposite effect. The author believes that the use of insulin as a supplement to carbohydrate therapy in liver disease is not indicated and is not customary in American clinics.

The diet should be high in carbohydrates and low in protein, especially in animal protein. If not enough fluid and carbohydrate can be supplied by mouth, they should be given intravenously, by rectum or by hypodermoclysis. He advocates Hendon's method for intravenous administration. The author quotes Heyd, who believes that in liver insufficiency it is important to combat dehydration by using known quantities of fluid, as well as to supply adequate carbohydrate. He uses 10 per cent dextrose in water for the rectal drip, and 5 per cent dextrose in physiological saline solution for hypodermoclysis and intravenous injection. Sodium bicarbonate, he notes, should never be given in any form, as he has found a tendency to alkalosis in some types of liver insufficiency and after biliary tract operations. Therapy should be controlled by repeated chemical analysis of the blood.

Calcium is also indicated in these cases, usually in the form of the chloride, but is not of much value without parathyroid (grains 1-20). Calcium, as well as carbohydrate, hastens liver repair and also has a favorable effect on blood coagulation in cases with a hemorrhagic tendency.

Small and oft repeated blood transfusions are valuable. When blood chlorides are low 250 cc. of a 5 per cent saline solution is given intravenously. He says that he repeats this if necessary.

He also uses mild cholagogues such as sodium salicylate, magnesium sulphate or oxgall.

He believes that these measures are indicated preoperatively and postoperatively in surgical cases where there is any evidence of hepatic insufficiency even of mild grade, and especially in biliary tract operations, where some degree of liver damage is so frequent.

—LeRoy D. Long.

The Surgical Treatment of Post-Apoplectic Contractions and Jacksonian Crises (Le Traitement Chirurgicale des Contractures et des Crises Jacksoniennes Post-Apoplectiques). By G. de Morsier and R. Fischer, *La Presse Medicale*, January 6, 1934.

Remarking that it is not usual to consider the presence of sequelae of vascular origin as an indication for operative intracranial exploration, the authors discuss two types of cases in which it has been done.

The first is where the crises precede or accompany the softening of the brain (*ramollissement cerebral*). While this type is infrequent, the contention is made that it does exist, Globus and Strauss of America, and Guillaín, Sorel, Riser, Ducaudray, Planques of France being cited as supporting the personal experience of the reporters. An illustrative case is that of a man who had an intense Jacksonian seizure twenty-four hours before a definite left hemiplegia which was followed by painful muscular contractions beginning in the left arm. There were some signs of increased intracranial tension. A ventriculogram seemed to indicate a tumor of right frontal lobe. Trepanation showed considerable oedema and softening of meninges and brain in relation with a vascular focus. After evacuation of the oedema

(the manner is not indicated, but presumably by drainage) the brain receded, and the patient was free from pain and crises up to death one year later.

The second type is where painful Jacksonian attacks as more or less distant sequelae of cerebral apoplexy are relieved by surgical operation, as illustrated by the case of a merchant fifty-five years of age who was operated upon over a year after the apoplexy in an effort to relieve painful contractions of arm and leg, Jacksonian seizures, total aphasia and complete helplessness. Incision of the dura mater after a bone flap on side opposite to affected arm and leg was followed by a herniation of softened meninges (apparently indicating the pia-arachnoid) from which, when incised, there escaped a large quantity of serous fluid followed by recession of the brain. The dura mater and scalp were sutured without replacing the bone flap (*le volet osseux*). One month later patient was able to walk with a cane, to flex the leg *a l'equerre*, to get up and sit down unsupported, and to go out with an attendant. There were some movements of arm and fingers. A trophic ulceration of a great toe healed rapidly. The Jacksonian seizures did not return. There was still an anarthria, but he was able to execute complicated orders, and to indicate certain wants by signs. Despondent because he was not able to speak, he committed suicide by gas asphyxiation a few months later.

Autopsy revealed gross evidences of endarteritis and thrombosis of the left middle cerebral artery and its branches, with destructive softening of the temporal and the parietal lobes; of posterior portion of frontal lobe and of the insula and the corpus striatum. There were no evidences of softening of the prefrontal area, and the occipital lobe seemed to be intact.

The authors believe that the data collected in cases reported prove that there is considerable oedema of the brain and the meninges in the neighborhood of a hemorrhage focus, and that Jacksonian seizures may be initiated by pressure and irritation produced by the oedema.

They believe that the data prove that contractions, Jacksonian seizures and aphasia might, in such cases, be more or less ameliorated by surgical intervention.

Comment: The primary vascular lesion in the average cerebral apoplexy is fairly uniform as to location and is pretty well understood. A hemorrhage in the internal capsule certainly does not invite surgical intervention.

At the same time, is it not possible that, in centering attention upon the primary lesion, we do not give sufficient value to the possible effects of the oedema which, in the natural course of the pathology, must invariably develop, to a greater or lesser extent, about the primary lesion?

I never have operated upon a patient who had the classical evidences of cerebral apoplexy, but I have the feeling that I did perform such an operation, unwittingly, some years ago. I do not have a record, but I remember the circumstances very well.

A man around sixty years of age suddenly fell down. He was found with a contusion on one side of the head and a contra-lateral hemiplegia. There was a question as to whether the hemiplegia was due to a trauma or to an apoplexy. Believing that trauma could not be excluded, the skull was opened several days later. There was a large amount of bloody serum beneath the dura. A drain was put in. There was rapid and great improvement, but not

complete recovery by any means, for the arm, while more or less useful, was permanently crippled.

We must not be led astray by reports like this by de Morsier and Fischer, but we ought to think about them, and earnestly, at that.

—LeRoy Long.

A New Procedure in General Anesthesia—Basal Anesthesia by the Intravenous Injection of Paraldehyde in a Solution of Glucose (*Nouveau Procédé d'Anesthésie Générale. Anesthésie de Base par Injection Intraveineuse de Paraldehyde Glucosee*). By I. I. Nitescu and J. Iacobovici, Faculty of Medicine, Bucarest, *La Presse Medicale*, Feb. 28, 1934.

The proposition is to produce a moderate narcosis which is denominated "hypno-anesthesia" by the intravenous injection of a solution of paraldehyde in a solution of glucose, this to be supplemented, in the average case, by the administration of ether or other volatile anesthetic agent by inhalation.

By experiment on dogs, it was found that the intravenous injection of from 15 centigrams to 20 centigrams of paraldehyde per kilogram of body weight, would produce a satisfactory hypno-anesthesia, or Basal anesthesia (*anesthésie de base*). This is equal to less than three minims of paraldehyde per kilogram.

The paraldehyde is dissolved in a isotonic solution of glucose which is specified as being 56.6 grams to the litre. Roughly, this makes a 5 per cent solution of glucose.

The paraldehyde is added to this solution of glucose in the proportion of 6 cc. or 8 cc. per 100 cc. of the glucose solution. This solution of paraldehyde and glucose is injected at the rate of 15 cc. to 20 cc. per minute.

The total amount injected is calculated in connection with the body weight, as indicated above—that is, in such a way that only from 15 centigrams to 20 centigrams of the paraldehyde per kilogram of body weight is employed.

Experiments in animals have shown that the lethal dose of paraldehyde injected intravenously is approximately 1.8 grams per kilogram of body weight. The authors call attention to the wide margin of safety, because it appears that the lethal dose is 8 or 10 times the amount required by hypno-anesthesia.

It was found that complete surgical anesthesia lasting from one to two hours could be produced by the intravenous injection of a solution of paraldehyde in 5 per cent glucose in a strength representing .8 to one gram per kilogram of body weight, but this is not advised in the human patient.

Eighty-two cases in which the method has been employed in human patients are reported. These include appendectomies, gastro-enterostomies, as well as more simple types of surgical procedures. In each case the basal anesthesia was supplemented by ether, or some other type of anesthetic.

The claim is made that there is no irritation of tissue by the paraldehyde used in the way indicated.

Finally, it is necessary that care must be exercised in choosing pure paraldehyde, pure glucose, and in thoroughly dissolving the paraldehyde in the glucose solution by agitation before it is used.

Incidentally, the authors report satisfactory results

from the employment of the paraldehyde solution in the treatment of tetanus.

LeRoy Long, M. D.

Magnesium Content of Soils and Cancer (Terrains Magnesiens et Cancer).

According to a report by Lucien Roques published in *La Presse Medicale*, March 28, 1934, this subject was discussed by MM. Delbet and Robinet at a meeting of the Paris Academy of Medicine, March 20, 1934.

Referring to the conclusion of Sartory, Meyer and Keller that, in the Haut-Rhin, the Bas-Rhin and the Moselle there was no relation between the geologic structure of the ground and the number of deaths from cancer, Delbet and Robinet present figures and facts to show that such a conclusion is wrong. It would appear that a careful analysis of the data shows that there is an inverse proportion between the richness of the soil in magnesium and the frequency of cancer.

Comment: In France it is well known that for a number of years Professor Delbet has argued that magnesium is inimical to the development of cancer. This has been capitalized by one of the Paris pharmaceutical houses in the production of a preparation of magnesium to which the name "Delbase" has been given—whether with or without the sanction of the celebrated surgeon, I do not know.

—LeRoy Long, M. D.

Analytical Study of the Results of Operations on the Cervix Uteri With Special Reference to Strictures. Edward Arthur Bullard, New York City. *American Journal of Obstetrics and Gynecology*, May, 1934.

This author has given a rather concise but comprehensive review of the history of surgical management of diseases of the cervix. The results of his analytical study of 261 patients can be best understood by the following summary and conclusion which are quoted. It is well to add that in making this study the author sent letters to 700 patients upon whom amputations, trachelorrhaphies, or tracheloplasties had been performed. The 261 cases who reported form the basis for this study.

Summary and conclusion are as follows:

1. A series of 261 patients operated upon by nineteen surgeons at Woman's Hospital during ten years for chronic cervicitis and lacerations, is presented for study of ultimate results.

2. For the cure of cervical leucorrhea high amputation is perfect, Sturmdorf operation excellent, low amputation very good, and trachelorrhaphy disappointing.

3. Varying degrees of cervical stenosis followed high amputation in 54 per cent of the cases, low amputation in 18 per cent, trachelorrhaphy in 12 per cent, and Sturmdorf tracheloplasty in 1.8 per cent.

4. Twenty-three out of 59 crevices repaired by high amputation were impenetrable by a probe, yet only two had obstructive dysmenorrhea. Only 2 per cent out of 59 operated upon required operative dilation later.

5. There was much less stenosis after low amputation (18 per cent); only 2 per cent obstructive dysmenorrhea. No obstructive dysmenorrhea. No obstructive dysmenorrhea after trachelorrhaphy.

6. The Sturmdorf operation gets a well-nigh per-

fect record of non-interference with subsequent pregnancies and labors.

7. One case of serious cervical dystocia followed a unilateral trachelorrhaphy, and this type of operation may have caused a premature labor in another; but there were nine entirely normal labors in patients who had a previous trachelorrhaphy.

8. No dystocia, no abortions followed low amputations, and there were eight normal labors; but this operation was the cause of at least one premature labor and perhaps of three others.

9. Of four pregnancies after high amputations, two terminated in premature labors and two aborted from undetermined causes, a bad record.

10. Diathermy may replace surgery in the treatment of chronic cervicitis; but only if it will eradicate the entire diseased area as dependably as a knife and show a better record in subsequent labors than the Sturmdorf operation.

11. The degree of scarring following diathermy has been sufficiently demonstrated.

Comment: The particular part of interest in this follow-up study was stricture of the cervix after operation. Such an analysis is not only of interest but considerable importance to those of us who are operating upon the cervix and should make us even more careful to observe the fundamental principles which tend to minimize this unfortunate complication of this field of surgery.

Wendell Long, M. D.

Temporary Surgical Sterilization With Subsequent Pregnancy. Albert H. Aldridge, New York. *American Journal of Obstetrics and Gynecology*, May, 1934, Vol. 27, note 5, page 741.

This author here describes the technic of an operative procedure which temporarily sterilizes a woman against too fertile husbands. The case is reported. She was a young woman of twenty-six, in poor physical condition, due at least in part to several abortions and the consequent loss of blood. An operation for retroversion of the uterus was indicated and at the time of abdominal operation the fimbriated ends of the tubes were mobilized and buried just beneath the peritoneal covering of the broad ligaments. Some eight years later this patient's general health had returned to normal and she had married another husband. She preferred to become pregnant. Subsequent operation was done and the fimbriated ends of the tubes removed from the peritoneal pouch. She was advised to take precautions against pregnancy for about one year's time, but soon thereafter became pregnant and was delivered at term in February, 1933.

The author discusses the various methods of technic which have been described for temporary sterilization. He concludes in the first place that a plastic operation on the tubes should be confined to the fimbriated ends. The operation should entail a minimum of bleeding and disturbance of the normal relationship and nutrition of the structures involved. Healing and security of the procedure are insured by so placing the structures, in their new position, as to avoid as much tension on them as possible. With these thoughts in mind he concludes that the only logical location in which to bury the fimbriated ends is in pockets formed in the broad ligaments.

While the principal purpose of the article is a description of the technic and a report of the case,

the author also discusses briefly the possible indications for such a procedure.

Comment: Purely from the standpoint of the surgical principles involved, the technic employed, and the results obtained, this article is of considerable interest to those dealing with pelvic pathology. The possible field of the application of this operation is entirely another question.

Wendell Long.

DERMATOLOGY, X-RAY AND RADIUM THERAPY

Edited by William E. Eastland, M.D.
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Malignant Melanomas Arising in Moles. Thomas Butterworth, M. D., Reading, Pennsylvania, and Joseph V. Klauder, M. D., Philadelphia. *Journal American Medical Association*, Vol. 102, No. 10, March 10, 1934.

The authors call attention to the fact that clinically pigmented nevi are classified as hard or soft. The former appear as irregular, warty masses with a pedicle or broad base and contain no hair. In the soft nevi they appear as pigmented spots of variable-size or as nodular warts. They are often soft and wrinkled like raisins, and frequently contain hair. The hard lesions result in squamous cell epitheliomas when malignancy occurs, whereas the soft lesions result in malignant melanomas when they undergo malignancy.

The malignant melanomas that are derived from moles are classified histologically as: first, melanocarcinoma; second, melanosarcoma; third, melano-endothelioma; and fourth, perithelioma. The transition of a benign mole to a malignant one may occur any time between six months and eighty-four years of age; however, the authors' series of fifty cases averaged forty-nine years of age. The preponderance is in the male sex and is essentially a disease of the white race. Certain sites are subject to these melanomas, as for example the fifty cases seen by the authors are as follows: face, 7; neck, 4; trunk, 13; arms, 6; buttocks, thighs and legs, 10; feet, 8; penis, 1; and perineum, 1.

In considering the role of trauma it is shown by statistics that trauma is a definite etiological factor. The symptoms by which the transition from the benign to the malignant stage can be noted are as follows: first, increase in size is usually the first symptom; second, increase in pigmentation, about the same as (1); third, bleeding frequently occurs but usually some months later; fourth, superficial ulceration with a hemorrhagic crust. The increase in size may be in part or the entire lesion. Satellite nodules at the periphery a short distance from the large lesion may occur. A persistent fact is noted by calling attention to lesions in which there is a fungating or large mass present. In that event metastases are late. The converse is true; in other words, the authors stated "it appears that a malignant growth is expended outward as excessive growth, or inward as metastasis."

In regard to pigmentation, an increase presenting a coal black appearance is the rule and is a striking symptom of a malignant melanoma. The bleeding occurs in the form of oozing as a rule. It is unnecessary for a lesion to have a history of a birthmark or a pigmented condition, although it usually occurs. The late symptom of malignant development

is enlargement of the regional lymph nodes. Metastases occur first, locally or by direct extension; second, by the lymphatics to the regional lymph glands; third, by the invasion into the blood stream. Cutting into a suspected malignant melanoma for historical examination is dangerous and should not be done unless the entire lesion is to be destroyed or removed.

In reviewing the various treatments used, the authors call attention to the greater incidence or recurrences after all forms of removal. They state that in accordance with the experience of Farrell the expectancy of life is shorter after surgical excision of the lymph nodes than after intensive roentgen therapy. In their opinion, neither surgery nor radiotherapy alone is the method of choice, but a combination of such treatment. Inasmuch as the lymphatic structure has been found involved three centimeters beyond the borders of the lesion, excision should include at least this much tissue or more. They favor electro-surgery and it should be carried deep enough to include the fascial covering of the muscle. Following this procedure, heavy filtered x-ray should be applied as soon as possible to the operative site and the draining lymphatic areas. The essayists question the advisability of the surgical removal of the original lymph nodes, and in case this is done, pre-operative radiation should be carried out. They favor amputation of any part that anatomical structure allows. In considering the prognosis, attention is called to the fact that generalized metastases occurred in an average of twenty-five months in the authors' series. The majority of patients die within three years after malignancy occurs.

Many pigmented lesions on the skin are common, whereas, the incidence of malignant melanomas is uncommon, as emphasized by a study of 18,113 cadavers having 2274 malignant tumors on them with an incidence of .89 per cent melanotic; therefore, the routine removal of these pigmented lesions as a preventive measure is impractical. In those lesions especially suspicious looking and repeatedly subject to irritation, removal is advisable.

The article is summed up by a very pertinent and wise remark, as follows: "Thorough destruction, including healthy tissue surrounding the lesion and beneath it, by means of the electrocautery, electrodesiccation or surgical excision, affords the safest means of removing pigmented nevi. The nevus should be entirely destroyed in one operation. To treat these lesions by painting with acids, by applying carbon dioxide snow, by electrolysis, strangulation by tying a string around a pedunculated lesion, or any treatment given at short intervals, are dangerous procedures which constitute irritation and afford opportunity for malignant change. In propaganda for the control of cancer, this principle cannot too strongly be emphasized."

Treatment of Postarsphenamine Dermatitis. Loren W. Shaffer, M. D., Detroit. *Archives of Dermatology and Syphilology*, Vol. 29, No. 2, February, 1934.

After delving into various theories about the mode of action that results in dermatitis incident to arsphenamine, Shaffer then proceeds into the method of prevention of arsphenamine dermatitis. He calls attention to the well-known but neglected state of itching and erythema which are the early signs of an on-coming dermatitis. By cessation of further arsphenamine treatment at that time and the administration of sodium thiosulphate in adequate doses an accident to the skin is prevented.

Where a case of this kind has developed the au-

thor goes into the various types of therapy that are now recognized as the most efficacious. He gives various authorities' opinions on these drugs. The first consideration as a therapeutic agent is that of sodium thiosulphate. In this summation he brings to light that although the former opinion was that the drug was a specific for arsenphenamine dermatitis it is now considerably short of being such. His opinion is that one gram of the freshly prepared solution should be given intravenously daily for three to six doses, and that delayed administration greatly deters the physician in obtaining satisfactory results.

Liver therapy is now considered, and is used on account of the hepatic insufficiency which may be due either to the disease or to the drug. The administration of five or ten cc. of liver extract intramuscularly three times a week was advised by Spie-thoff. Not only is this drug valuable as an active agent against a developing case of dermatitis, but works well in a threatened disaster of the skin.

Calcium thiosulphate is then discussed. According to the principles observed in Germany, saturated doses of calcium gluconate are emphasized; for example, three injections intravenously daily of ten cc. of a ten per cent calcium gluconate solution, and three such injections intramuscularly and two tablespoonfuls of the powder in the water by mouth three times daily for three days, after which it is given by mouth alone. Shaffer has not experienced such treatment, but he declares there is a milder type of therapy, such as ten cc. intravenously and ten cc. intramuscularly and one or two tablespoonfuls three times daily by mouth.

Dextrose is next considered. The theory of its action is that a decreased amount of glycogen exposes the liver cells to the toxic effect of arsenic and that the administration of dextrose accelerates the elimination of arsenic. Usually in severe cases considerable edema is present. This is greatly overcome by a hypertonic solution of dextrose. The author proposes the administration of fifty cc. of a fifty per cent solution of dextrose intravenously for some three to five days at the onset of the dermatitis. He also discusses the use of dextrose in diluted solutions employed as a diluent for arsenphenamine injections in the regular administration of the drug. In the City Hospital of Detroit the author was able to shorten the stay of arsenical dermatitis cases to about eight days, which is of considerable importance due to the economic conditions of the present day. In a general comment the idea is given that the use of sodium thiosulphate alone in the treatment of this condition is entirely adequate, and that the administration of the various other drugs as mentioned above is definitely indicated.

BOOK REVIEWS

New and Nonofficial Remedies, 1934, containing description of the articles which stood accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1934. Price, Postpaid, \$1.50. Pp. 510; lx. Chicago: American Medical Association.

New and Nonofficial Remedies, 1934, has the same pleasing format and helpful mechanism that has characterized it in past years. The enrichment of the index started a few years ago is continued and its value even increased by some desirable simplification of cross references.

The Council has made the usual careful revision

of the book. The general article Lactic Acid-Producing Organisms and Preparations has been practically rewritten. The chapter on Arsenic preparations has undergone some revision, especially in the statement concerning Neoarsphenamine. The descriptions of Chiniofon and Vioform have been revised in the light of recent developments in the treatment of amebiasis. The article on Ethylhydrocupreine has been revised to delete references to Optochin Base, which has been omitted; Optochin Hydrochloride has been retained, being recommended only for external use. The description of Typhoid Vaccine has been revised to give the dosage of the combination of typhoid and paratyphoid organisms and to mention the use of typhoid vaccine in nonspecific protein therapy. A number of revisions of the Council's Rules have been made, particularly with reference to the names of products, which is one of the most frequent and troublesome of the problems with which the Council has to deal. Comparison with last year's volume will show that revisions of more or less importance occur in many other chapters.

Among the preparations newly included in this volume are: Aminophylline, a double salt or mixture of theophylline and ethylenediamine, with the advantage of greater solubility over other theophylline preparations; the new alum precipitated diphtheria toxoid; Neo-Iopax, a new medium for intravenous urography; Benzedrine, an ephedrine substitute; serums containing type II pneumococcus antibodies, which the Council has recently recognized as worthy of clinical trial in view of improved preparations and technic; Autolyzed Liver Concentrate and Extralin, two new liver preparations for use in the treatment of pernicious anemia; Metycaine, a new local anesthetic; and Sodium Morrhuate, a salt of the fatty acids of cod liver oil, proposed for use as a sclerosing agent.

Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association for 1933. Cloth. Price, Postpaid \$1.00. Pp. 188. Chicago: American Medical Association.

The main bulk of the volume, which is, incidentally, considerably increased over that of recent annual volumes, is taken up with reports on products which the Council has found unacceptable for inclusion in New and Nonofficial Remedies. Of special note are: The report on Alpha-Lobelin, a drug upon which the Council in 1927 issued a preliminary report but which is now found not to have established itself as a respiratory stimulant of as great usefulness as carbon dioxide and oxygen; the report on a number of preparations marketed by the Upjohn Company with unwarranted, misleading and unscientific claims; the report on Clavipurin, a preparation of the alkaloids of ergot, marketed without adequate declaration of the composition and without adequate standardization under a nondescriptive proprietary name with unwarranted therapeutic claims; the report on Diampysal, another pyridine derivative proposed for use in bacterial infections, convincing evidence for the therapeutic value of which is lacking; the report on Euphydigital, an irrational mixture of digitalis and a theophylline preparation marketed under an uninforming, proprietary name, with exaggerated and unwarranted claims for its therapeutic value; the report on Guphen, stated to be the guaiacol ester of phenylcinchoninic acid, marketed with unwarranted therapeutic claims under an uninforming, proprietary name and having no proved advantage over its constituents administered separately; the report on Niazo, a pyridine compound of unsubstantiated value as a urinary antiseptic; the re-

port on Omnadin, a preparation recognized for use for nonspecific lipoprotein therapy practically as a cure-all; and the report on a group of endocrine preparations of the Rovin Laboratories variously unacceptable as being of indefinite composition and of undemonstrated therapeutic value.

A feature of marked current interest in this volume is the preliminary report on Alpha-Dinitrophenol, the new drug for acceleration of cellular metabolism. The Council voices a warning on the dangers attending the use of this drug; this warning has been increasingly justified in reports of fatalities since the appearance of the Council's report in July of last year. Other preliminary reports which make this volume one of the most interesting issued by the Council in recent years are those on Dilaudid, a new narcotic drug related to morphine; Fuadin, a new antimony compound for use in the treatment of bilharziasis and granuloma inguinale; and Hip-puran, a new product for intravenous and oral urography. The comprehensive and definite special report on estrogenic substances furnishes a much needed review of the present status of such products in gynecologic therapy. The Council insists upon the doctrine that basic laboratory investigation of these substances should precede clinical use. Of interest to hospital authorities, especially in connection with the book *Hospital Practice for Interns* recently issued by the Council in collaboration with the Council on Medical Education and Hospitals, is the special report, *The Hospital Formulary*, by Hatcher and Stainsby of New York. It outlines a plan characterized by the highest regard for the principles of rational drug therapy. Of more general interest is the Council's second report on the intravenous use of barbitol compounds which is the result of a questionnaire sent to representative physicians. In view of the answers to the questionnaire, the Council reaffirmed its previous decision concerning the limitations of intravenous use of barbitol compounds; namely, that these preparations should be administered intravenously only in a limited number of conditions in which administration by other routes is not feasible. The report carefully details these conditions. The lengthy report on the omission of Pyridium is an outstanding example of the meticulous fairness characteristic of the Council's treatment of the manufacturers of commercial preparations. In connection with the omission of Pyridium should be noted the report which declares Azophene (Mallophone) not acceptable. This product has been shown to be identical with Pyridium and the Council considers the claims for its usefulness as a local, general, or urinary antiseptic as unwarranted, as are those for Pyridium.

CONTAGION AS A FACTOR IN CERTAIN HEART AND JOINT DISEASES

John J. Carden, San Francisco (Journal A. M. A., March 17, 1934), reports nine cardiac and rheumatoid arthritic cases that occurred in one family group. In this group, only one patient has a definite and constant focus of infection. Since June, 1930, from which time this focus of infection has been better drained and varying members of the group have come into more intimate contact with this patient, four have died of cardiac disease, one is practically bed-ridden with cardiac disease, two are up but with serious cardiac conditions, one is still able to work but has a pronounced cardiac lesion, and seven have had varying attacks of rheumatoid arthritis. Furthermore, when the patient having the definite and constant focus of infection is away or in bed, all the others show marked improvement until her return.

The author believes that in rheumatoid arthritis, (1) the causative focus of infection in certain cases is not in the individual but in some other member of the family group; (2) treatment in these cases is ineffective unless the patient is removed from contact with this group member, and (3) a prolonged contact with a focus of infection in another is necessary before symptoms ensue. In certain types of endocarditis and myocarditis, (1) there is a definite contagious factor; (2) this factor may be in a focus of infection in another member of the family group and (3) effective treatment requires isolation from this infected group member.

SPLENECTOMY IN CHRONIC ARTHRITIS ASSO- CIATED WITH SPLENOMEGALY AND LEUKOPENIA (FELTY'S SYNDROME)

Erle B. Craven, Jr., Durham, N. C. (Journal A. M. A., March 17, 1934), relates a case that came under his observation, corresponding in essential details with the cases reported by Felty in 1924 and the case reported by Hanrahan and Miller in 1933, that was characterized by chronic arthritis, splenomegaly and leukopenia. There was an apparently temporary effect of splenectomy, first performed in this syndrome by Hanrahan and Miller. The gross and microscopic appearance of the spleen removed from the patient was similar to the picture described by Hanrahan and Miller. A persistent, although variable, eosinophilia occurred and small groups of eosinophils were observed in the splenic pulp. In Felty's original description, two of his three cases in which differential counts were reported exhibited an eosinophilia. In the cases reported in the literature there is not uncommonly an association of neutropenia and eosinophilia with chronic arthritis and of eosinophilia with splenomegaly. There was a diminished sugar tolerance or delayed sugar removal.

DELAYED APPEARANCE OF DEFORMITY IN VERTEBRAL BODY FRACTURES

O. O. Feaster, St. Petersburg, Fla. (Journal A. M. A., Feb. 24, 1934), calls attention to a class of spinal injuries—compression fractures of the vertebral bodies—which show no evidence of fracture deformity when roentgenograms are made immediately after the injury but on subsequent study ten days or more later do show a recognizable deformity in the lateral silhouette. It is probable that many, if not all, of the cases of so-called Kummell's disease belong to this class of injury; that is, compression fractures not recognized at the time of injury and probably not studied again until the diagnosis of Kummell's disease is made. It is seriously doubted that Kummell's disease should be considered a disease entity. A most striking thing in the study of a number of reports of vertebral body compression fractures is the surprisingly slight degree of trauma that may be responsible. One should always bear in mind that the injury is frequently at a much higher level than the pain. Two patients have been seen, each with both the eleventh dorsal and the first lumbar vertebral bodies fractured, of whom the surgeon requested a study of the sacro-iliac region, and quite naturally, for there was no discomfort elsewhere. It is, of course, superfluous to mention that no roentgen examination of the spine is complete that does not include a lateral view; in fact, this is usually the only film of definite value.

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Hathaway, Euel P.	Lawton
Hues, Chas. P.	Lawton
Joyce, Chas. W.	Fletcher
Kerr, Geo. E.	Chattanooga
Knee, Loren C.	Lawton
Lutner, Thos. R.	Lawton
Malcolm, John W.	Lawton
Martin, Chesley M.	Elgin
Mason, Wm. J.	Lawton
Mitchell, E. Brent	Lawton
Penwell, Geo. H.	Lawton

COTTON

Baker, G. W.	Walters
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CRAIG

Adams, F. M.	Vinita
Bagby, E. L.	Vinita
Bagby, Louis	Vinita
Bradshaw, J. O.	Welch
Elam, B. L.	Centralia
Gastineau, F. T.	Vinita
Hays, P. L.	Vinita
Herron, A. W.	Vinita
Marks, W. R.	Vinita
Mitchell, R. L.	Veterans Hosp., Muskogee
Neer, C. S.	Vinita
Stough, D. B.	Vinita
Walker, J. F.	Grove

CREEK

Bisbee, W. G.	Bristow
Caffield, A. W.	Drumright
Coppedge, O. C.	Bristow
Coppedge, O. S.	Depew
Cowart, O. H.	Bristow
Croston, Geo. C.	Sapulpa
Haas, Harry	Sapulpa
Hollis, J. E.	Bristow
Jones, Alva	Sapulpa
Jones, Ellis	Sapulpa
Kaiser, Geo. L.	Bristow
King, E. W.	Bristow
Lampton, J. B.	Sapulpa
Lewis, Peter K.	Sapulpa
Longmire, Wm. P.	Sapulpa
Mattenlee, James M.	Sapulpa
McCallum, Carl L.	Sapulpa
McDonald, C. R.	Mannford
Mote, Paul	Sapulpa
Neal, Wm. J.	Drumright
Reece, C. B.	Sapulpa
Reynolds, E. W.	Bristow
Reynolds, S. W.	Drumright
Schrader, Chas.	Bristow
Schwab, C. B.	Sapulpa
Sisler, Frank H.	Bristow
Starr, O. W.	Drumright
Sweeney, Roy M.	Sapulpa
Turner, Fred W.	Sapulpa
Wells, John M.	Bristow
Williams, J. Clay	Bristow

CUSTER

Alexander, C. J.	Clinton
Allen, F. W.	Leedy
Boyd, T. A.	Weatherford
Doler, C.	Clinton
Frizzell, J. T.	Clinton
Gaede, D.	Weatherford
Gossom, K. D.	Custer
Hickman, R. L.	Clinton
Hinshaw, J. R.	Butler
Lamb, Ellis	Clinton
Lamb, Lealon	Clinton
Loyd, E. M.	Taloga
McBurney, C. H.	Clinton
Parker, O. H.	Custer
Rogers, McClain	Clinton
Rolle, Neeson	Custer
Ruhl, N. E.	Weatherford
Seba, W. E.	Leedy
Williams, Gordon D.	Weatherford
Wilson, H. H.	Clinton
Vieregg, Frank R.	Clinton

GARFIELD

Aitken, W. A.	Enid
Baker, R. C.	Enid
Bitting, B. T.	Enid
Cotton, Lee W.	Enid
Duffy, Francis M.	Enid
Field, Julian	Enid
Francisco, Glenn	Enid
Francisco, J. W.	Enid
Gregg, O. R.	Enid
Hamble, V. R.	Enid
Harris, D. S.	Drummond
Hartman, G. A.	Sharon, Pa.
Hinson, Bruce R.	Enid
Hinson, T. B.	Enid
Hopkins, P. W.	Enid
Hudson, F. A.	Enid
Hudson, H. H.	Enid
Jacobs, Raymond G.	Enid
Kendall, W. L.	Enid
Kiebler, W. G.	Enid
Lamerton, W. E.	Enid
Mayberry, S. N.	Enid
McEvoy, S. H.	Enid
McInnis, A. L.	Enid
Moore, J. W.	2617 S. Robinson, Oklahoma City
Newell, W. B.	Enid
Neilson, W. P.	Enid
Piper, A. S.	Enid
Rhodes, W. H.	Enid
Roberts, D. A.	Mountain View
Roberts, D. D.	Enid
Shannon, H. R.	Enid
Sheets, Marion	Enid
Swank, J. R.	Enid
Vandever, H. F.	Enid
Walker, John R.	Enid
Watson, J. M.	Enid
Wigner, R. W.	Enid
Wilkins, A. E.	Covington
Wolf, E. J.	Waukomis

GARVIN

Alexander, Robt. M.	Paoli
Callaway, John R.	Pauls Valley
Greening, W. P.	Pauls Valley
Gross, T. F.	Lindsay
Johnson, G. L.	Pauls Valley
Lindsey, N. H.	Pauls Valley
Lindsey, R. H.	Pauls Valley
Monroe, Hugh H.	Lindsay

Pratt, Chas. M.	Lindsay
Robberson, Marvin E.	Wynnewood
Shi, A. H.	Stratford
Sullivan, Cleve L.	Elmore City
Taylor, E. H.	Maysville
Walker, Thomas	Wynnewood
Wilson, H. P.	Wynnewood

GRADY

Antle, H. C.	Chickasha
Ambrister, J. C.	Chickasha
Barry, W. R.	Alex
Baze, Walter J.	Chickasha
Bledsoe, Martha	Chickasha
Bonnell, W. L.	Chickasha
Boon, U. S.	Chickasha
Cook, W. H.	Chickasha
Cox, C. P.	Ninnekah
Dawson, E. L.	Chickasha
Downey, D. S.	Chickasha
Emanuel, L. E.	Chickasha
Emanuel, Roy E.	Chickasha
Gerard, G. R.	Chickasha
Hampton, P. J.	Rush Springs
Henning, A. E.	Tuttle
Hume, R.	Minco
Leeds, A. B.	Chickasha
Little, A. C.	Minco
Livermore, W. H.	Chickasha
Mason, Rebecca	Chickasha
McClure, H. M.	Chickasha
Mitchell, C. P.	Chickasha
Nunnery, A. W.	Chickasha
Pyle, Oscar S.	Chickasha
Renegar, J. F.	Tuttle
Woods, L. E.	Chickasha

GRANT

Hardy, I. V.	Medford
Lawson, E. E.	Medford

GREER

Austin, C. W.	Mangum
Border, G. F.	Mangum
Chambers, M. E.	Vinson
Cherry, G. P.	Mangum
Dodson, W. O.	Willow
Hollis, J. B.	Mangum
Lansden, J. B.	Granite
Lowe, J. T.	Mangum
Meredith, J. S.	Duke
McGregor, F. H.	Mangum
Nelson, J. H.	Granite
Pearson, L. E.	Mangum
Poer, E. M.	Mangum

HARMON

Hopkins, Samuel W.	Hollis
Husband, Wm. G.	Hollis
Jones, James E.	Hollis
Lynch, Russell H.	Hollis
Ray, W. T.	Gould
Yeargan, Wm. M.	Hollis

HASKELL

Hill, Arthur T.	Stigler
Rumley, Jas. C.	Stigler
Terrell, Ross F.	Stigler
Thompson, Wm. A.	Stigler
Turner, Thos. Boyd	Stigler
Williams, N. K.	McCurtain

HUGHES

Bentley, A. A.	Allen
Butts, A. M.	Holdenville
Davenport, A. L.	Holdenville
Diggs, G. W.	Wetumka
Felix, T. B.	Holdenville
Floyd, W. E.	Holdenville
Ford, R. B.	Holdenville
Frey, Harry	Holdenville
Hamilton, S. H.	Non
Hemphill, J. A.	Wetumka
Hicks, C. A.	Wetumka
Mattison, W. L.	Calvin
Morgan, W. G.	Holdenville
Morris, R. D.	Allen
Taylor, W. L.	Holdenville
Wallace, C. S.	Holdenville

JACKSON

Abernethy, E. A.	Altus
Allgood, John	Altus
Bird, Jessie	Eldorado
Brown, R. F.	Altus
Collier, E. K.	Tipton
Crow, E. S.	Olustee
Ensey, J. E.	Altus
Fox, R. H.	Altus
Hix, J. B.	Altus
Mabry, E. W.	Altus
McConnell, L. H.	Altus
Reid, J. R.	Altus
Rudell, W. P.	Altus
Spears, C. G.	Altus
Stults, J. S.	Altus
Taylor, R. Z.	Blair

JEFFERSON

Andrewskoski, W. T.	Ryan
Browning, W. M.	Waurika
Burgess, W. C.	Ringling
Collins, D. B.	Waurika
Derr, J. I.	Waurika
Edwards, F. M.	Ringling
Hollingsworth, J. I.	Waurika
Maupin, C. M.	Waurika
McPherson, J. M.	Terrell
Mingus, F. M.	Loco
Wade, L. L.	Ryan
Watson, J. W.	Ryan

JOHNSON

Clark, Guy	Milburn
Looney, J. T.	Tishomingo

KAY

Armstrong, W. O.	Ponca City
Arrendell, C. W.	Ponca City
Beatty, J. H.	Tonkawa
Becker, L. H.	Blackwell
Berry, G. L.	Blackwell
Brown, Howard S.	Ponca City
Clift, M. C.	Blackwell
Denham, T. W.	Three Sands
Edmonds, R. L.	Blackwell
Gibson, R. B.	Ponca City
Gordon, D. M.	Ponca City
Gowey, H. O.	Newkirk
Hawkins, J. C.	Blackwell
Howe, J. H.	Ponca City
Hudson, J. O.	Braman
Leslie, W. M.	Blackwell
Matthews, Dewey	Tonkawa
McElroy, Thos.	Ponca City
Miller, D. W.	Blackwell

Moore, G. C.	Ponca City
Morgan, L. S.	Ponca City
Neal, L. G.	Ponca City
Nichols, A. S.	Ponca City
Niemann, Geo. H.	Ponca City
Northcutt, C. E.	Ponca City
Obermiller, R. G.	Ponca City
Risser, A. S.	Blackwell
Staley, P. A.	Ponca City
Vance, L. C.	Ponca City
Waggoner, E. E.	Tonkawa
Wagner, J. C.	Ponca City
Walker, I. D.	Tonkawa
Werner, J. W.	Newkirk
White, M. S.	Blackwell

KINGFISHER

Cavett, E. R.	Loyal
Dixon, A.	Hennessey
Hodgson, C. M.	Kingfisher
Scott, Frank	Kingfisher
Townsend, B. I.	Hennessey

KIOWA

Adams, J. L.	Hobart
Bonham, J. M.	Hobart
Braun, J. P.	Hobart
Britt, H. A.	Snyder
Bryce, J. R.	Snyder
Finch, J. Wm.	Sentinel
Gray, Melvin	Mountain View
Hathaway, A. H.	Mountain View
Land, J. A.	Hobart
Lloyd, H. C.	Hobart
Martin, F. F.	Roosevelt
McIlwain, Wm.	Lone Wolf
Miller, W. W.	Gotebo
Moore, J. H.	Hobart
Preston, C. R.	Mountain Park
Ritter, J. M.	Roosevelt
Walker, F. E.	Lone Wolf
Watkins, B. H.	Hobart
Wilkerson, J. M.	Hobart
Winter, J. D.	Hobart

LATIMER

Evins, E. L.	Wilburton
Hamilton, E. B.	Wilburton
Harris, J. M.	Wilburton
Henry, T. L.	Wilburton
Rich, R. L.	Red Oak

LEFLORE

Baker, F. P.	Talihina
Bevill, S. D.	Poteau
Booth, G. R.	LeFlore
Collins, E. L.	Panama
Dean, S. C.	Howe
Duff, W. M.	Braden
Gillian, W. C.	Spiro
Hardy, Harrell	Poteau
Hartshorn, G. E.	Spiro
Head, W. M.	Talihina
Hunt, W. J.	Poteau
Minor, R. M.	Williams
Rosborough, Wm. D.	Talihina
Shippey, W. L.	Wister
Wright, R. L.	Poteau

LINCOLN

Adams, J. W.	Chandler
Anderson, W. D.	Stroud
Brown, F. C.	Sparks
Burleson, Ned	Prague

Dorrell, G. B.	Chandler
Erwin, Para F.	Wellston
Hemphill, C. H.	Prague
Jenkins, H. B.	Tryon
Marshall, A. M.	Chandler
Nickel, U. E.	Davenport
Norwood, F. H.	Prague
Robertson, C. W.	Chandler
Rollins, J. S.	Prague
Sosbee, J. W.	Stroud

LOGAN

Allen, Robert	Guthrie
Barker, Chas. B.	Guthrie
Barker, E. O.	Guthrie
Barker, Pauline	Guthrie
Childers, A. G. T.	Mulhall
Cornwell, N. L.	Coyle
First, F. R.	Crescent
Gardner, P. B.	Marshall
Goodrich, E. E.	Crescent
Gray, Dan	Guthrie
Hahn, L. A.	Guthrie
Hill, C. B.	Guthrie
Larkin, H. W.	Minco
LeHew, J. Leslie	Guthrie
Miller, Wm. C.	Guthrie
Petty, C. S.	Guthrie
Ringrose, R. F.	Guthrie
Ritzhaupt, Louis H.	Guthrie
Souter, J. E.	Guthrie
Trigg, F. E.	Guthrie
West, Alva A.	Guthrie

MAJOR

Specht, Elsie L.	Fairview
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MARSHALL

Holland, John L.	Madill
Logan, J. H.	Lebanon
Robinson, P. F.	Madill
Veazey, J. H.	Madill

MAYES

Adams, Sylba, Hayward Indian Hosp., Hayward, Ind.	
Bryant, W. C.	Choteau
Hollingsworth, J. E.	Strong
Morrow, B. L.	Salina
Puckett, Carl.	22 W. Sixth St., Oklahoma City
Spurgeon, J. H.	Locust Grove
Walker, Russell H.	Pryor
Whitaker, Wm. J.	Pryor
White, L. C.	Adair

McCLAIN

Barger, G. S.	Purcell
Dawson, O. O.	Wayne
Kolb, I. N.	Blanchard
McCurdy, W. C.	Purcell
Royster, R. L.	Purcell
Slover, B. W.	Blanchard

McCURTAIN

Barker, N. L.	Broken Bow
Hall, Lyman S.	Broken Bow
Lokey, J. P.	Idabel
Moreland, J. T.	Idabel
Moreland, W. A.	Idabel
Sherrill, R. H.	Broken Bow
Williams, R. D.	Broken Bow

McINTOSH

Jacobs, L. I.	Hanna
Lee, N. P.	Checotah
Little, D. E.	Eufaula
Marshall, J. C.	Checotah
Smith, F. L.	Eufaula
Tolleson, W. A.	Eufaula
West, G. W.	Eufaula

MURRAY

Anadown, P. V.	Sulphur
Bailey, H. C.	Sulphur
Brown, Byron B.	Davis
Luster, J. C.	Davis
Powell, W. H.	Sulphur
Sadler, F. E.	Sulphur
Slover, Geo.	Sulphur

MUSKOGEE

Ballance, R. A.	Webbers Falls
Ballantine, H. T.	Surety Bldg.
Berry, W. D.	Barnes Bldg.
Blakemore, J. L.	Barnes Bldg.
Bruton, L. D.	Barnes Bldg.
Burns, H. C.	Warner
Campbell, J. F.	Barnes Bldg.
DeGroot, C. E.	Manhattan Bldg.
Donnell, R. N.	626 North E
Dorwart, F. G.	Barnes Bldg.
Duckett, B. J.	Braggs
Earnest, A. N.	Barnes Bldg.
Everly, A. W.	Equity Bldg.
Ewing, Finis W.	Surety Bldg.
Fite, E. H.	Barnes Bldg.
Fite, W. P.	Barnes Bldg.
Fryer, S. J.	Surety Bldg.
Fullenwider, C. M.	Barnes Bldg.
Graves, G. B.	Boynton
Hamm, S. G.	Haskell
Heitzman, C. W.	Barnes Bldg.
Holcombe, R. Nowlin	Surety Bldg.
Joblin, W. R.	Porter
Kane, Bernard E.	Haskell
Keith, Emma	Miami
King, F. S.	Surety Bldg.
Klass, O. C.	Surety Bldg.
Kupka, John F.	Haskell
McAlister, L. S.	Barnes Bldg.
Mobley, A. L., Vet. Hosp., Albuquerque, New Mex.	
Neely, S. D.	Commercial Nat'l Bldg.
Newhauser, Mayes	Vet. Hospital
Nichols, J. T.	Equity Bldg.
Oldham, I. B. Jr.	426 N. 6th
Oldham, I. B. Sr.	426 N. 6th
Osgood, W. W.	Equity Bldg.
Rafter, J. G.	Manhattan Bldg.
Reynolds, John	1st Nat'l Bldg.
Rice, C. V.	Barnes Bldg.
Scott, H. A.	Surety Bldg.
Shackelford, T. T.	Haskell
Thomas, L. M.	Webbers Falls
Thompson, M. K.	Surety Bldg.
Walton, F. L.	Surety Bldg.
Waterfield, F. E.	Commercial Nat'l Bldg.
Wallis, G. C.	Fort Gibson
White, Chas. E.	N. 6th Street
White, J. Hutchings	Surety Bldg.
Wilkiemeyer, F. J.	Vet. Hospital
Wolfe, Ira C.	426 N. 6th

NOBLE

Cavitt, R. A.	Morrison
Cooke, C. H.	Perry
Evans, A. M.	Perry
Francis, J. W.	Perry
Owen, B. A.	Perry
Renfrow, T. F.	Billings

NOWATA

Lang, S. A.	Nowata
Prentiss, H. M.	Nowata
Prentiss, M. B.	Nowata
Roberts, S. P.	Nowata
Scott, M. B.	Delaware
Sudderth, J. P.	Nowata

OKFUSKEE

Adams, A. C.	Weleetka
Bloss, C. M.	Okemah
Bombarger, C. C.	Paden
Brice, M. O.	Okemah
Cochran, C. M.	Okemah
Dovell, John C.	Paden
Jenkins, W. P.	Okemah
Kennedy, J. A.	Okemah
Keyes, R.	Okemah
Lucas, A. C.	Castle
Melton, A. S.	Okemah
Moyse, J. L.	Okemah
Pemberton, J. M.	217½ W. Commerce, Okla. City
Preston, J. R.	Weleetka
Spickard, L. J.	Okemah

OKLAHOMA

Adams, Robert H.	1211 Ramsey Tower
Akin, R. H.	400 West 10th
Alford, J. M.	Medical Arts Bldg.
Allen, E. P.	1200 No. Walker
Andrews, Lelia E.	1200 No. Walker
Arrington, C. T.	805 No. Walnut
Bailey, F. M.	1219 West 21st
Bailey, W. H.	301 West 12th
Balyeat, Ray M.	1200 No. Walker
Barker, C. E.	1200 No. Walker
Batchelor, J. J.	Medical Arts Bldg.
Bates, C. E.	Federal Bldg.
Beyer, M. R.	2006 West 39th
Binkley, J. G.	Medical Arts Bldg.
Boatright, Lloyd C.	Medical Arts Bldg.
Boggs, Nathan	Perrine Bldg.
Bolend, Floyd J.	1200 No. Walker
Bolend, Rex	Medical Arts Bldg.
Bondurant, C. P.	Medical Arts Bldg.
Bonham, W. L.	Medical Arts Bldg.
Borecky, Geo. L.	Ramsey Tower
Bowen, Ralph	1200 No. Walker
Bradley, H. C.	Perrine Bldg.
Branham, D. W.	301 West 12th
Brewer, A. M.	Perrine Bldg.
Brown, Chas. P.	Perrine Bldg.
Brown, Gerster W.	Medical Arts Bldg.
Brundage, C. L.	1200 No. Walker
Buchanan, T. A.	Amer. Nat'l Bldg.
Bulla, Gordon C.	400 West 10th
Burton, John F.	1200 No. Walker
Butler, H. W.	1200 No. Walker
Cailey, Leo F.	Medical Arts Bldg.
Campbell, Coyne H.	Medical Arts Bldg.
Canada, J. C.	217½ West Commerce
Cates, Albert	Medical Arts Bldg.
Caviness, J. J.	1200 No. Walker
Charney, L. H.	Medical Arts Bldg.
Chase, A. B.	Colcord Bldg.
Christian, Paul C.	Federal Bldg.
Clark, Fred	Enid
Cloudman, H. H.	Medical Arts Bldg.
Clymer, Cyril E.	Medical Arts Bldg.
Coley, A. J.	Medical Arts Bldg.
Collins, H. D.	Medical Arts Bldg.
Cooper, F. M.	Medical Arts Bldg.
Cunningham, S. R.	Medical Arts Bldg.
Daily, Henry J.	Medical Arts Bldg.
Daniels, Harry A.	Colcord Bldg.
Davis, C. E.	Medical Arts Bldg.

Davis, E. P.	918 N. W. 23rd
DeMand, F. A.	1200 No. Walker
Dersch, W. H.	Medical Arts Bldg.
Dickson, Green K.	1200 No. Walker
Dill, Francis E.	Medical Arts Bldg.
Dougherty, Virgil	Gorei, Abyssinia, Africa
Dowdy, T. W.	Medical Arts Bldg.
Duncan, Darrell G.	Medical Arts Bldg.
Early, R. O.	Medical Arts Bldg.
Eastland, W. E.	Medical Arts Bldg.
Eley, N. Price	400 West 10th
Emenhiser, Lee K.	801 East 13th
Erwin, F. B.	Medical Arts Bldg.
Eskridge, J. B.	1200 No. Walker
Fagin, Herman	1200 No. Walker
Faris, Brunel D.	Wesley Memorial Hosp., Chicago
Ferguson, E. Gordon	Medical Arts Bldg.
Ferguson, E. S.	Medical Arts Bldg.
Field, C. H.	Medical Arts Bldg.
Fishman, C. J.	132 West 4th
Fitz, R. G.	Taming Fu Hoppi, Providence No. China
Flesher, J. H.	Edmond
Frierson, S. E.	Medical Arts Bldg.
Fulton, C. C.	Medical Arts Bldg.
Fulton, George	Amer. Nat'l Bldg.
Garrison, Geo. H.	1200 No. Walker
Gee, O. J.	Medical Arts Bldg.
Gibbs, Allen H.	Ramsey Tower
Glomset, John L.	1200 No. Walker
Goldfain, E.	717 No. Robinson
Goodwin, R. Q.	Medical Arts Bldg.
Graening, P. K.	1st Nat'l Bldg.
Gray, Floyd	1200 No. Walker
Gregory, M. S.	2209 West 22nd
Guthrie, Austin L.	1200 No. Walker
Hall, Clark H.	Medical Arts Bldg.
Hammonds, O. O.	Medical Arts Bldg.
Haney, A. H.	Medical Arts Bldg.
Harbison, Frank	Terminal Bldg.
Harbison, J. E.	Terminal Bldg.
Harris, Henry W.	1200 No. Walker
Haskett, Paul E.	Hales Bldg.
Hatchett, J. A.	Medical Arts Bldg.
Hayes, B. A.	1200 No. Walker
Hazel, Onis	400 West 10th
Heatley, J. E.	Medical Arts Bldg.
Hetherington, A. J.	2014 Gatewood Ave.
Hicks, Fred B.	Medical Arts Bldg.
Hirshfield, A. C.	Medical Arts Bldg.
Hood, F. Redding	1200 No. Walker
Holliday, J. R.	1200 No. Walker
Howard, R. M.	1200 No. Walker
Hyroop, Gilbert L.	Medical Arts Bldg.
Jacobs, Minard F.	Medical Arts Bldg.
Janco, Leon	10 West Park
Jeter, H. G.	1200 No. Walker
Jolly, W. J.	614 West 14th
Jones, Hugh C.	Medical Arts Bldg.
Kahle, C. E.	1738 NW 16th
Keller, W. F.	Medical Arts Bldg.
Kelly, John F.	301 West 12th
Kelso, J. W.	Medical Arts Bldg.
Keltz, Bert F.	Medical Arts Bldg.
Kernodle, S. E.	119 West 5th
Kimball, Geo. H.	Ramsey Tower
Kuchar, V.	1210 West 17th
Kuhn, J. F.	Medical Arts Bldg.
Lain, E. S.	Medical Arts Bldg.
Lamb, John H.	Medical Arts Bldg.
LaMotte, Geo. A.	Colcord Bldg.
Lane, Lloyd C.	311 NW 9th
Langsford, Wm.	323 NE 11th
Langston, Wann	Medical Arts Bldg.
Lawson, N. E.	1616 NW 26th
Lee, Clarence E.	Hightower Bldg.
Lehmer, Elizabeth	132 West 4th

Lemon, Cecil W. Medical Arts Bldg.
 Lency, Fannie Lou Brittain 400 West 10th
 Lewis, A. R. Hightower Bldg.
 Lingenfelter, F. M. 1200 No. Walker
 Little, John R. Ramsey Tower
 Long, LeRoy Medical Arts Bldg.
 Long, LeRoy D. Medical Arts Bldg.
 Long, Ross D. 617 West 14th
 Long, Wendell Medical Arts Bldg.
 Lowry, Dick 1200 No. Walker
 Lowry, Tom 1200 No. Walker
 Loy, C. F. Perrine Bldg.
 Lyon, J. I. Edmond
 MacCabe, R. S. Medical Arts Bldg.
 Margo, Elias 717 No. Robinson
 Martin, Howard C. Medical Arts Bldg.
 Martin, J. T. 1200 No. Walker
 McBride, E. D. 717 No. Robinson
 McGee, J. P. 1200 No. Walker
 McDonald, J. C. 301 West 12th
 McHenry, D. D. Medical Arts Bldg.
 McHenry, L. C. Medical Arts Bldg.
 McLaughlin, J. R. Medical Arts Bldg.
 McNeill, P. M. Medical Arts Bldg.
 Miles, W. H. City Hall Bldg.
 Mills, R. C. City Hall Bldg.
 Moffitt, J. A. University Hospital
 Moor, H. D. 800 East 13th
 Moore, C. D. Perrine Bldg.
 Moore, Ellis Medical Arts Bldg.
 Moorman, Floyd 1200 No. Walker
 Moorman, L. J. 1200 No. Walker
 Moreledge, Walker 1200 No. Walker
 Morgan, C. A. 1st Nat'l Bldg.
 Moth, M. V. Amer. Nat'l Bldg.
 Murdoch, R. L. Medical Arts Bldg.
 Musick, E. R. Medical Arts Bldg.
 Musick, V. H. 217½ West Commerce
 Mussil, W. M. Medical Arts Bldg.
 Myers, Ralph E. 1200 No. Walker
 Nagle, Patrick S. Medical Arts Bldg.
 Nicholson, B. H. 301 West 12th
 Nunnery, E. E. 2531½ So. Robinson
 O'Donoghue, D. H. Medical Arts Bldg.
 Padberg, J. W. 1800 West 16th
 Paulus, D. D. 301 West 12th
 Payte, J. I. Medical Arts Bldg.
 Peacock, Bernice 2012 No. Penn
 Penick, Grider Colcord Bldg.
 Phelps, A. S. Medical Arts Bldg.
 Pine, John S. Medical Arts Bldg.
 Points, Blair Luther
 Postelle, J. M. Medical Arts Bldg.
 Pounders, C. M. 1200 No. Walker
 Price, J. S. 1200 No. Walker
 Reck, J. A. Colcord Bldg.
 Reed, Emil P. 1200 No. Walker
 Reed, Horace 1200 No. Walker
 Reed, James Robt. Medical Arts Bldg.
 Reichmann, Ruth S. Medical Arts Bldg.
 Riely, Lea A. Medical Arts Bldg.
 Riley, J. W. 119 West 5th
 Robinson, J. H. 301 West 12th
 Roddy, J. A. Ramsey Tower
 Roland, M. M. Medical Arts Bldg.
 Rosenberger, F. E. Perrine Bldg.
 Rountree, C. R. 1200 No. Walker
 Rucks, W. W., Jr. 301 West 12th
 Rucks, W. W. 301 West 12th
 Ruhl, A. M. Edmond
 Salomon, A. L. 1200 No. Walker
 Sands, A. J. Choctaw
 Sanger, Fenton A. Key Bldg.
 Sanger, F. M. Key Bldg.
 Sanger, Winnie M. Key Bldg.
 Serwer, Milton 1200 No. Walker

Shelton, J. W. Medical Arts Bldg.
 Smith, Chas. A. Medical Arts Bldg.
 Smith, Delbert G. Medical Arts Bldg.
 Smith, L. L. 2914 So. Robinson
 Smith, M. Mid-Continent Life Bldg.
 Snow, J. B. 1200 No. Walker
 Stanbro, G. E. 301 West 12th
 Starry, L. J. 1200 No. Walker
 Stilwell, R. J. 1st Nat'l Bldg.
 Stone, S. N. Edmond
 Stout, M. E. 209 West 13th
 Strader, S. Ernest Medical Arts Bldg.
 Strother, S. P. 120 NW 23rd
 Sullivan, Ernest Hightower Bldg.
 Sullivan, Elijah S. Medical Arts Bldg.
 Tabor, Geo. R. 1st Nat'l Bldg.
 Taylor, Chas. B. Medical Arts Bldg.
 Taylor, W. M. 1200 No. Walker
 Thompson, W. J. 1200 No. Walker
 Todd, H. Coulter Colcord Bldg.
 Townsend, C. W. Medical Arts Bldg.
 Trice, Spencer T. Hightower Bldg.
 Turner, Henry H. 1200 No. Walker
 Underwood, E. L. Hales Bldg.
 Vahlberg, E. R. Perrine Bldg.
 Von Wedel, Curt Colcord Bldg.
 Wails, T. G. Medical Arts Bldg.
 Wallace, W. J. Medical Arts Bldg.
 Warmack, J. C. 200 NW 16th
 Watson, R. D. Britton
 Weir, M. W. Ramsey Tower
 Wells, Eva Medical Arts Bldg.
 Wells, W. W. Medical Arts Bldg.
 West, W. K. 1200 No. Walker
 Westfall, L. M. Medical Arts Bldg.
 White, A. W. Medical Arts Bldg.
 White, Oscar 1200 No. Walker
 White, Phil Perrine Bldg.
 Wildman, S. F. Medical Arts Bldg.
 Wilkins, Harry Medical Arts Bldg.
 Williams, H. M. 315 West 22nd
 Williams, Leonard C. 1200 No. Walker
 Williamson, W. H. 1st Nat'l Bldg.
 Wilson, E. C. 1001 NE 20th
 Wilson, K. J. Medical Arts Bldg.
 Wolff, J. P. 1200 No. Walker
 Wright, Harper 240 West Commerce
 Yeakel, E. L. 3420 No. Robinson

OKMULGEE

Alexander, Lin Okmulgee
 Alexander, T. C. Okmulgee
 Bollinger, I. W. Henryetta
 Boswell, H. D. Henryetta
 Carloss, T. C. Morris
 Carnell, M. D. Okmulgee
 Cott, W. M. Okmulgee
 Cotteral, J. R. Henryetta
 Edwards, J. G. Okmulgee
 Glismann, M. B. Okmulgee
 Holmes, A. R. Henryetta
 Hudson, W. S. Okmulgee
 Kilpatrick, G. A. Henryetta
 Leslie, S. B. Okmulgee
 Matheney, J. C. Okmulgee
 McKinney, G. Y. Henryetta
 Milroy, J. A. Okmulgee
 Ming, C. M. Okmulgee
 Mitchener, W. C. Okmulgee
 Nelson, J. P. Beggs
 Rains, H. L. Okmulgee
 Randel, D. M. Okmulgee
 Randel, H. O. Okmulgee
 Rembert, J. C. Okmulgee
 Rodda, E. D. Okmulgee
 Robinson, J. C. Henryetta

Sanderson, W. C.	Henryetta
Simpson, N. N.	Henryetta
Stark, W. W.	Okmulgee
Torrance, L. B.	Okmulgee
Vernon, W. C.	Okmulgee
Wallace, V. M.	Morris
Watson, F. S.	Okmulgee
Watson, W. S.	Okmulgee

OSAGE

Aaron, W. H.	Pawhuska
Alexander, E. T.	Barnsdall
*Barrett, R. J.	Pawhuska
Baylor, R. A.	Fairfax
Carmicheal, M. M.	Osage
Caton, C. N.	Wynona
Chase, W. M.	Barnsdall
Colley, T. J.	Hominy
Dozier, B. E.	Shidler
Govan, T. P.	Pawhuska
Guild, C. H.	Shidler
Hemphill, G. K.	Pawhuska
Hemphill, P. H.	Pawhuska
Karasek, M.	Shidler
Keyes, E. C.	Shidler
Lipe, E. N.	Fairfax
Logan, C. K.	Hominy
Ragan, T. A.	Fairfax
Reed, J. M.	Magnolia Springs, Ala.
Rust, M. E.	Pawhuska
Smith, R. O.	Hominy
Sullivan, B. F.	Barnsdall
Summers, H. L.	Marion, Ill.
Walker, G. I.	Hominy
Walker, Roscoe	Pawhuska
Williams, C. W.	Pawhuska
Worten, D.	Pawhuska

OTTAWA

Aisenstadt, E. Albert	Picher
Barry, J. R.	Picher
*Black, W. H.	3426 E. 9th St., Kansas City, Mo.
Butler, V. V.	Picher
Cannon, R. F.	Miami
Connell, Matt A.	Picher
Colvert, Geo. W.	Miami
Cooter, A. M.	Miami
Craig, J. A.	Miami
Cunningham, P. J.	Afton
DeArman, M. M.	Miami
DeArman, Tom M.	Miami
DeTar, Geo. A.	Miami
Dolan, W. M.	Picher
Evans, F. Green	Afton
Hampton, J. B.	Commerce
Helm, Fred P.	City Bd. of Health, Topeka, Kans.
Hughes, A. R.	Wyandotte
Jacobs, J. C.	Miami
Jacoby, J. S.	Commerce
Lanning, J. M.	Picher
Kitchen, John C.	Picher
McCallum, Chas.	Quapaw
McNaughton, G. P.	Miami
Meriwether, F. V., U. S. Mar. Hos., New Orleans, La.	
Miller, H. K.	Fairland
Moon, J. T.	Miami
Phillips, Isaac	Picher
Pinnell, General	Miami
Prowell, J. W.	Kansas, Okla.
Ralston, B. W.	Commerce
Russell, Richard	Picher
Shelton, B. W.	Miami
Smith, W. B.	Miami
Taylor, G. W.	Picher
Williams, J. P.	Picher
Wormington, F. L.	Miami

*Deceased.

PAWNEE

Beitmen, C. E.	Skedee
Jones, R. E.	Pawnee
McFarland, H. B.	Cleveland
Roberts, J. A.	Cleveland
Robinson, E. T.	Cleveland

PAYNE

Adams, James E.	Cushing
Bassett, C. M.	Cushing
Beach, C. H.	Glencoe
Bergegrun, Katherine	Tehachapi, Calif.
Cleverdon, L. A.	Stillwater
Davidson, W. M.	Cushing
Davis, Benjamin	Cushing
Friedemann, P. W.	Stillwater
Graham, R. N.	Cushing
Harris, E. M.	Cushing
Herrington, D. J.	Cushing
Holbrook, R. W.	Perkins
Leatherock, R. E.	Cushing
Love, T. A.	Cushing
Manning, H. C.	Cushing
Martin, Emmett	Cushing
Martin, John F.	Stillwater
Martin, John W.	Cushing
Mitchell, L. A.	Stillwater
Mitchell, Wade C.	Yale
Perry, Dan L.	Cushing
Richardson, R. M.	Cushing
Roberts, R. E.	Stillwater
Strahan, Eva	Stillwater
Waggoner, Roy E.	Stillwater
Waltrip, J. R.	Yale
Wilhite, L. R.	Perkins

PITTSBURG

Bartheld, F. T.	McAlester
Barton, V. H.	McAlester
Baum, F. J.	McAlester
Bright, J. B.	Kiowa
Bunn, A. D.	Savanna
Bussey, H. N.	2043 NW 23rd St., Okla. City
Carlock, A. E.	Hartshorne
Crews, J. W.	Atwood
Davis, J. E.	McAlester
Dorrough, Joe	McAlester
George, L. J.	Stuart
Hailey, W. P.	Haileyville
Harris, C. T.	Kiowa
Johnston, J. C.	McAlester
Kies, B. B.	McAlester
Kilpatrick, G. A.	McAlester
Kuyrkendall, L. C.	McAlester
LeWallen, W. P.	Canadian
McCarley, T. H.	McAlester
Miller, F. A.	Hartshorne
Munn, J. A.	McAlester
Norris, T. T.	Krebs
Palmer, Clara L.	McAlester
Park, J. F.	McAlester
Pearce, C. M.	McAlester
Pemberton, R. K.	McAlester
Ramsey, W. G.	Quinton
Rice, O. W.	McAlester
Sames, W. W.	Hartshorne
Shuller, E. H.	McAlester
Wait, W. C.	McAlester
Welch, A. J.	McAlester
Williams, C. O.	McAlester
Willour, L. S.	McAlester
Wilson, H. A.	McAlester
Wilson, McClellan	McAlester

PONTOTOC

Breco, J. G.	Ada
Brydia, Catherine	Ada
Canada, E. A.	Ada
Craig, J. W.	Ada
Cummings, I. L.	Ada
Dawson, B. B.	Ada
Dean, W. F.	Ada
Foerster, Hervey A.	CCC Camp, Davis
Gullatt, E. M.	Ada
Hollaway, T. R.	Stonewall
King, R. F.	Ada
Lewis, E. F.	Ada
Lewis, M. L.	Ada
McKeel, Sam A.	Ada
McNew, M. C.	Ada
Miller, O. H.	Ada
Morey, John B.	Ada
Needham, C. F.	Ada
Ross, S. P.	Ada
Rutledge, J. A.	Ada
Sugg, Alfred R.	Ada
Threlkeld, W. R.	Ada
Webster, M. M.	Ada
Welborn, O. R.	Ada

POTTAWATOMIE

Anderson, R. M.	Shawnee
Applewhite, G. H.	Shawnee
Baker, M. A.	Shawnee
Ball, W. A.	Wanette
Baxter, G. S.	Shawnee
Blount, W. T.	Maud
Brown, R. A.	Prague
Byrum, J. M.	Shawnee
Campbell, H. G.	Shawnee
Carson, F. L.	Shawnee
Cordell, U. S.	McComb
Culbertson, R. R.	Maud
Cullum, J. E.	Earlsboro
Fortson, J. L.	Tecumseh
Gallaher, F. C.	Shawnee
Gallaher, Wm. M.	Shawnee
Gaston, J. I.	Shawnee
Gillick, David W.	Shawnee
Hughes, H. E.	Shawnee
Hughes, J. E.	Shawnee
Isvakov, V. G.	Rusk State Hosp., Rusk, Texas
Kayler, R. C.	McLoud
Mathews, W. F.	Tecumseh
McAdams-Williams, Alpha	Shawnee
McFarling, A. C.	Shawnee
Newlin, Frances P.	Shawnee
Paramore, C. F.	Shawnee
Rice, E. E.	Shawnee
Rowland, T. D.	Shawnee
Royster, J. H.	Wanette
Shivers, E. E.	St. Louis
Stevens, W. S.	315 Federal Bldg., Okla. City
Stooksbury, J. M.	Shawnee
Turner, James H., Cumberland Hosp., Brooklyn, N. Y.	
Wagner, H. A.	Shawnee
Walker, J. A.	Shawnee
Walker, J. E.	Shawnee

PUSHMATAHA

Ball, Ernest	Sulphur
Connally, D. W.	Nashoba
Huckabay, B. M.	Antlers
Johnson, H. C.	Antlers
Kirkpatrick, J.	Tuskahoma
Lawson, John S.	Clayton
Patterson, E. S.	Antlers

ROGERS

Anderson, F. A.	Claremore
Arnold, A. M.	Claremore
Bassman, Caroline	Claremore
Beson, C. W.	Claremore
Bushyhead, J. C.	Claremore
Collins, B. F.	Claremore
Hays, W. F.	Claremore
Howard, W. A.	Chelsea
Jennings, K. D.	Chelsea
Mason, W. S.	Claremore
Meloy, R. C.	Claremore
Nelson, Ira A.	Care Sac & Fox Agc'y, Toledo, Iowa

SEMINOLE

Bates, C. W.	Seminole
Bates, J. A.	Seminole
Black, W. R.	Seminole
Briggs, T. H.	Wewoka
Chambers, Claude S.	Seminole
Davis, John	Seminole
Deaton, A. N.	Wewoka
Fowler, Arthur Jr	Seminole
Geisen, A. F.	Konawa
Grimes, John P.	Wewoka
Hampton, K. P.	Seminole
Harber, J. N.	Seminole
Harrison, T. F.	Wewoka
Huddleston, W. L.	Konawa
Long, W. J.	Konawa
Martin, W. S.	Wewoka
McAlester, E. R.	Seminole
McGovern, J. D.	Wewoka
Mills, N. W.	Snomac
Mosher, D. D.	Seminole
Pace, L. R.	Seminole
Price, J. T.	Seminole
Reeder, H. M.	Konawa
Reynolds, J. B.	Seminole
Scott, Thomas A.	Bowlegs
Shaw, Dwight B.	Seminole
Shuler, A. C.	Seminole
Stephens, A. B.	Seminole
Stevens, C.	Seminole
Throgmorton, H. B.	Seminole
Turlington, M. M.	Seminole
Van Sandt, Guy B.	Wewoka
Van Sandt, Max	Wewoka
Walker, A. A.	Wewoka
Ware, T. H.	Seminole
Whittle, Charlton C.	Wewoka

SEQUOYAH

Morrow, J. A.	Sallisaw
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STEPHENS

Bartley, J. P.	Duncan
Brewer, J. W.	Marlow
Campbell, John D.	Duncan
Carmicheal, J. B.	Duncan
Chumley, Conner P.	Duncan
Garrett, S. S.	County Line
Harrison, C. M.	Comanche
Ivy, Wallace S.	Duncan
Lindley, E. C.	Duncan
Linzy, J. H.	Comanche
Long, Dock	Duncan
McLean, W. Z.	Marlow
McMahan, A. M.	Duncan
Nieweg, J. W.	Duncan
Overton, L. M.	Tecumseh
Patterson, James L.	Duncan
Pruitt, C. C.	Comanche
Richardson, R. W.	Carnegie
Salmon, W. T.	Duncan
Smith, L. P.	Marlow

Talley, Chas. N.	Marlow
Thomason, E. B.	Marlow
Weedn, Alva J.	Duncan
Williamson, S. H.	Duncan

TEXAS

Hayes, R. B.	Guymon
Lee, Daniel S.	Guymon
Risen, Wm. J.	Hooker
Smith, Morris	Guymon
Thurston, Harry E.	Texhoma

TILLMAN

Allen, C. C.	Frederick
Arrington, J. E.	Frederick
Bacon, O. G.	Frederick
Childers, J. E.	Tipton
Fisher, Roy	Frederick
Reynolds, J. C.	Frederick
Spurgeon, T. F.	Frederick

TULSA

Allen, V. K.	Medical Arts Bldg.
Allison, T. P.	Sand Springs
Ament, C. M.	305 Ritz Bldg.
Armstrong, O. C.	Medical Arts Bldg.
Atchley, R. Q.	Medical Arts Bldg.
Atkins, P. N.	Medical Arts Bldg.
Barham, J. H.	314 New Daniels Bldg.
Baum, E. E.	Medical Arts Bldg.
Beesley, W. W.	Palace Bldg.
Beyer, J. W.	Palace Bldg.
Billington, J. J.	Medical Arts Bldg.
Black, H. J.	Medical Arts Bldg.
Bolton, J. Fred	Medical Arts Bldg.
Bradfield, S. J.	Medical Arts Bldg.
Bradley, C. E.	Medical Arts Bldg.
Branley, B. L.	Medical Arts Bldg.
Braswell, J. C.	Medical Arts Bldg.
Brogden, J. C.	Medical Arts Bldg.
Brookshire, J. E.	313 Ritz Bldg.
Browne, Henry S.	Medical Arts Bldg.
Bryan, W. J.	Medical Arts Bldg.
Calhoun, C. E.	Sand Springs
Calhoun, W. H.	207 Atlas Life Bldg.
Callahan, H. W.	Medical Arts Bldg.
Campbell, W. M.	1301½ E. 15th
Carney, A. B.	247 Kennedy Bldg.
Chalmers, J. S.	Sand Springs
Childs, D. B.	1226 So. Boston
Childs, H. C.	1226 So. Boston
Childs, J. W.	1226 So. Boston
Clinton, F. S.	823 Wright Bldg.
Clulow, G. H.	410 McBirney Bldg.
Cohenour, E. L.	Medical Arts Bldg.
Cook, W. Albert	Medical Arts Bldg.
Coulter, T. B.	Medical Arts Bldg.
Cronk, F. Y.	Medical Arts Bldg.
Daily, R. E.	Bixby
Davis, A. H.	Medical Arts Bldg.
Davis, B. J.	Sand Springs
Davis, T. H.	Medical Arts Bldg.
Dean, W. A.	Medical Arts Bldg.
Denny, E. Rankin	Medical Arts Bldg.
Dieffenbach, J. N.	114 West 3rd
Dillon, C. A.	209 New Daniels Bldg.
Dunlap, Roy	Medical Arts Bldg.
Edwards, D. L.	Medical Arts Bldg.
Emerson, A. V.	Medical Arts Bldg.
Evans, H. J.	Medical Arts Bldg.
Farris, H. Lee	Medical Arts Bldg.
Flack, F. L.	Exchange Bank Bldg.
Flanagan, O. A.	Medical Arts Bldg.
Ford, H. W.	417 Okla. Nat'l Gas Bldg.
Fulcher, Joseph	Medical Arts Bldg.
Garabedian, G.	1235 So. Boulder
Garrett, D. L.	Medical Arts Bldg.
Gilbert, J. B.	307 Roberts Bldg.

Glass, F. A.	Medical Arts Bldg.
Goddard, R. K.	Skiatook
Goodman, S.	Medical Arts Bldg.
Gorrell, J. F.	Medical Arts Bldg.
Graham, H. C.	1501 So. Baltimore
Green, Harry	Medical Arts Bldg.
Grosshart, Paul	Medical Arts Bldg.
Hall, G. H.	420 McBirney Bldg.
Haralson, C. H.	Medical Arts Bldg.
Harris, B.	Jenks
Hart, M. M.	1232 So. Boulder
Hart, M. O.	1232 So. Boulder
Hartgraves, T. A.	Morningside Hosp.
Haskins, T. M.	336 Richards Bldg.
Hays, Laverne	Medical Arts Mldg.
Henderson, F. W.	Medical Arts Bldg.
Henley, Marvin D.	Medical Arts Bldg.
Henry, G. H.	Medical Arts Bldg.
Hille, H. L.	Collinsville
Hoke, C. C.	207 Philtower Bldg.
Hooper, J. S.	Medical Arts Bldg.
Hotz, Carl	604 So. Cincinnati
House, M. A.	606 Beacon Life Bldg.
Huber, W. A.	Medical Arts Bldg.
Hudson, D. V.	Medical Arts Bldg.
Humphrey, B. H.	Sperry
Hutchinson, A.	Bixby
Hyatt, E. G.	604 So. Cincinnati
Jackson, L. T.	206½ So. Main
Johnson, C. D.	Medical Arts Bldg.
Johnson, R. R.	Sand Springs
Jones, W. M.	Medical Arts Bldg.
Kemmerly, H. P.	Medical Arts Bldg.
Kramer, A. C.	Medical Arts Bldg.
Larrabee, W. S.	Medical Arts Bldg.
Laws, J. H.	Broken Arrow
Lee, J. K.	Medical Arts Bldg.
LeMaster, D. W.	Medical Arts Bldg.
Lhevine, M. B.	Medical Arts Bldg.
Loney, W. R. R.	Medical Arts Bldg.
Lowe, J. O.	319 Philcade Bldg.
Lynch, T. T.	319 Philcade Bldg.
MacKenzie, Ian	Medical Arts Bldg.
Margolin, Bertha	Medical Arts Bldg.
Mayginnis, P. H.	315 Palace Bldg.
McAnally, W. F.	Box 1756, Pittsburgh, Pa.
McComb, L. A.	Medical Arts Bldg.
McDonald, J. E.	Medical Arts Bldg.
McGill, R. A.	Medical Arts Bldg.
McGuire, H. J.	Medical Arts Bldg.
McKellar, M.	604 So. Cincinnati
McLean, E. W.	Jenks
McQuaker, Molly	1648 East 13th
Miller, Geo. H.	215 Atlas Life Bldg.
Miner, J. L.	114 East 6th
Mohrman, S. S.	611 Daniel Bldg.
Munding, L. A.	Medical Arts Bldg.
Murdock, H. D.	Medical Arts Bldg.
Murray, P. G.	Medical Arts Bldg.
Murray, S.	Medical Arts Bldg.
Myers, F. C.	302 Richards Bldg.
Neal, J. H.	319 West 9th
Nelson, F. L.	614 New Daniels Bldg.
Nelson, F. J.	Medical Arts Bldg.
Nelson, I. A.	St. John's Hosp.
Nelson, M. O.	Medical Arts Bldg.
Nesbitt, E. P.	Medical Arts Bldg.
Nesbitt, P. P.	Medical Arts Bldg.
Northrup, L. C.	410 McBirney Bldg.
Norman, G. R.	2543 E. Admiral
Osborne, G. O.	Medical Arts Bldg.
Pavy, C. A.	Medical Arts Bldg.
Peden, J. C.	Medical Arts Bldg.
Perry, H.	618 McBirney Bldg.
Perry, John C.	618 McBirney Bldg.
Pigford, A. W.	Medical Arts Bldg.

Pigford, R. C.	Medical Arts Bldg.
Presson, L. C.	Medical Arts Bldg.
Price, Harry	Medical Arts Bldg.
Reese, K. C.	Medical Arts Bldg.
Reynolds, J. L.	305 Palace Bldg.
Rhodes, R. E. L.	Medical Arts Bldg.
Richey, S. M.	1304½ West 17th
Roberts, T. R.	2647 East 7th
Rogers, J. W.	Medical Arts Bldg.
Roth, A. W.	Medical Arts Bldg.
Roy, Emile	317 Wright Bldg.
Ruprecht, H.	604 So. Cincinnati
Rushing, F. E.	Medical Arts Bldg.
Russell, G. R.	604 So. Cincinnati
Scott, Phil	Medical Arts Bldg.
Searle, M. J.	Medical Arts Bldg.
Shepard, S. C.	Medical Arts Bldg.
Shepard, R. M.	Medical Arts Bldg.
Sherwood, R. G.	208 Masonic Temple
Showman, W. A.	Medical Arts Bldg.
Simpson, Carl F.	Medical Arts Bldg.
Sipple, M. E.	1411½ So. Troost
Sisler, Wade	807 So. Elgin
Smith, D. O.	604 So. Cincinnati
Smith, N. R.	Medical Arts Bldg.
Smith, R. L.	1226 So. Boston
Smith, R. N.	Medical Arts Bldg.
Smith, R. R.	403 New Daniels Bldg.
Smith, R. V.	Medical Arts Bldg.
Smith, W. O.	323 Philcade Bldg.
Springer, M. P.	604 So. Cincinnati
Stallings, T. W.	114 West 4th
Stanley, Mont	509 New Daniels Bldg.
Stemmons, J. W.	Collinsville
Stewart, H. B.	1516 East 21st
Stevenson, James	Medical Arts Bldg.
Stuart, L. H.	Medical Arts Bldg.
Summers, C. S.	505 New Daniels Bldg.
Trainor, W. J.	Medical Arts Bldg.
Tucker, I. N.	Medical Arts Bldg.
Underwood, D. J.	Medical Arts Bldg.
Underwood, F. L.	Medical Arts Bldg.
Venable, S. C.	720 Mayo Bldg.
Wainright, A. G.	424 McBirney Bldg.
Walker, W. A.	410 So. Cincinnati
Wall, G. A.	Medical Arts Bldg.
Wallace, J. E.	Medical Arts Bldg.
Ward, B. W.	823 Wright Bldg.
White, N. S.	Medical Arts Bldg.
White, P. C.	Medical Arts Bldg.
Wiley, A. Ray	Medical Arts Bldg.
Wilks, F. M.	Collinsville
Witcher, R. B.	Medical Arts Bldg.
Wood, C. J.	Medical Arts Bldg.
Woodson, Fred	Medical Arts Bldg.
Young, C. W.	Cleveland
Zink, H. F.	414 Security Bldg.
Zink, Roy	414 Security Bldg.

WAGONER

Bates, Samuel R.	Wagoner
Leonard, John D.	Wagoner
Plunkett, J. H.	Wagoner
Riddle, H. K.	Coweta

WASHINGTON

Athey, J. V.	Bartlesville
Beechwood, E. E.	Bartlesville
Chamberlin, Elizabeth M.	Bartlesville
Crawford, G. W.	Dewey
Crawford, H. G.	Bartlesville
Crawford, J. E.	Bartlesville
Crawford, T. O.	Dewey
Daly, John F.	Albuquerque, New Mexico
Dorsheimer, G. V.	Dewey
Etter, F. S.	Bartlesville
Green, O. I.	Bartlesville

Hudson, L. D.	Dewey
Kingman, W. H.	Bartlesville
LeBlanc, Wm.	Ochelata
Parks, S. M.	Bartlesville
Rewerts, Fred C.	Bartlesville
Shipman, Wm. H.	Bartlesville
Smith, J. G.	Bartlesville
Somerville, O. S.	Bartlesville
Staver, B. F.	Bartlesville
Torrey, John P.	Bartlesville
Vansant, James P.	Dewey
Weber, Henry C.	Bartlesville
Weber, Sherwell G.	Bartlesville
Wells, Cephas J.	Bartlesville
Wilson, C. C.	Bartlesville

WASHITA

Bennett, D. W.	Sentinel
Bungardt, A. H.	Cordell
Copeland, E. K.	Cordell
Jones, J. Paul	Dill
Livingston, L. G.	Cordell
Neal, A. S.	Cordell
Stoll, A. A.	Foss
Sullivan, C. B.	Colony
Weaver, E. S.	Cordell
Webber, A.	Bessie

WOODS

*Ames, Howard Banks	Alva
Benjegerdes, Theodore D.	Beaver
Bilby, Geo. N.	State Capitol Bldg., Okla. City
Clapper, E. P.	Waynoka
Ensor, D. B.	Hopeton
Grantham, Elizabeth	Alva
Hale, A. E.	Alva
Hall, Ray Lormer	Waynoka
Hammer, John E.	Kiowa, Kans.
Hunt, Isaac S.	Freedom
McGrew, E. A.	Beaver
Rogers, Chas. L.	Carmen
Royer, Chas. A.	Kiowa, Kans.
Simon, Wm. E.	Alva
Stephenson, I. F.	Alva
Stephenson, Walter L.	Alva
Templin, O. E.	Alva

WOODWARD

Barber, J. J.	Laverne
Beam, J. P.	Arnett
Berry, T. M.	Supply
Camp, E. F.	Buffalo
Darwin, D. W.	Woodward
Davis, J. J.	Higgins, Texas
Davis, J. P.	Shattuck
Davis, Stella K.	Shattuck
Dixon, T. E.	Mooreland
Duncan, J. C.	Forgan
Hill, H. K.	Laverne
Irvin, G. E.	Gage
Johnson, H. L.	Supply
Leachman, T. C.	Woodward
Mathews, G. F.	Supply
McClendon, J. W.	Supply
Newman, Floyd S.	Shattuck
Newman, O. C.	Shattuck
Nyland, G. A.	Gate
Patterson, Fred L.	Woodward
Silverthorne, C. R.	Woodward
Tedrowe, C. W.	Woodward
Triplett, T. B.	Mooreland
Walker, H.	Rosston
Watts, D. D.	Laverne
White, L. C.	Adair
Williams, C. E.	Woodward
Wright, H. L.	Supply

THE JOURNAL

OF THE

OKLAHOMA STATE MEDICAL ASSOCIATION

VOLUME XXVII

McALESTER, OKLAHOMA, JULY, 1934.

NUMBER 7

THE DIAGNOSIS AND TREATMENT OF RABIES

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At the mention of rabies all of us, no doubt, call to memory many strange tales that we heard as children concerning this dreadful malady. It is doubtful if there is any other disease around which so much superstition and myth have grown. These stories were first recorded in Greek mythology. Aristaeus, son of Apollo, was a special god of the Greeks to guard against rabies. In 500 B. C., Democritos, in his "Natural History of the Animal" (Book VIII, Chapter 22), first described the symptoms in the dog. Aristotle, in 322 B. C., said: "Dogs suffer from a madness that puts them in a state of fury, and all animals which they bite, when in this condition, become also attacked by madness." Throughout the literature we find reference to rabies in the works of Virgil, Horace, Ovid and Plutarch, as well as many others. It was Cornelius Celsus, 100 A. D. (not a physician), who first described the disease in a human being, and he also was the first to use the term hydrophobia in his description. The most remarkable thing was his recommendation of cauterization of the wound as a preventive measure. Even today this procedure, if properly and promptly carried out, is considered by many, especially Dr. McCoy of the Hygienic Laboratory, as the most reliable single procedure. It was during this period that many peculiar theories were advanced as the cause of rabies. Namely: excessive heat or great cold, sudden violent changes in temperature, inhalation of fetid vapors, lack of sexual intercourse in the dog. Dogs that howled during Christmas Eve, or ate the bones of the paschal lamb, were certain to develop the disease. Lack of the sexual act as cause of rabies was still rampant as late as 1863, when Leblanc made a statement to that effect before the Academy of Medicine in Paris.

This myth and superstition has been just as pronounced—if not more so—in regard to treatment. As mentioned above, the first recommendation was cauterization, but following this many and various recommendations were made. The most common early procedure was to allow the wound to become purulent. The following were also considered of importance: Enemas, diet, hot or cold baths and sea bathing. Even today in parts of Russia sea bathing is used to drive out rabies. The Chinese thought that a sudden shock or scare was beneficial. The treatment by mystic formulae and witchcraft included external application to wound of wool of black goats, rags that had been dipped in dog or human blood, or, better still, menstrual blood, dog's heart or tongue, chicken feathers, desiccated human feces, urine and menstrual blood. Several of these were recommended for internal use. However, the most persistent mythical remedy is the "madstone" of the present day.

The first reliable work on this disease was in 1767 and 1771 when Van Swieten thoroughly described the disease in the human and first called attention to the paralytic form. Morgagni, in 1820, did much to dispel the many erroneous ideas concerning the disease. Zinke, in 1804, first proved that saliva was the source of infection and was able to produce rabies in healthy dogs and rabbits by applying infected saliva to open wounds. Brown-Sequard and others, in 1879, declared the central nervous system an important factor. It was for Louis Pasteur and his cohorts, in 1881, to prove the central nervous system the seat of the disease. On this fundamental fact Pasteur based his research and was able to perfect a means of immunization against rabies. In 1885 Pasteur gave the first vaccine to Joseph Meister and was able by rational measures to save the first human life. On March 27, 1903, Negri, an Italian physician, before the Medical Society of Pavia, first described the specific cell changes in the ganglia, which we know today as Negri

bodies, and thus perfected a rapid means of diagnosis. From that date on there has been a large amount of research work, but nothing material was added until Semple. in his work in India, produced the killed virus treatment, which today is used almost universally.

Let us now consider this disease as understood today and define it as an acute, specific infectious disease, usually transmitted to man by the bite of a rabid warm-blooded animal. It is characterized pathologically by an acute parenchymatous encephalomyelitis. Clinically it has a variable incubation period, followed by an early stage of excitement and a later paralytic stage with a rapid fatal termination.

The etiology that is generally accepted is that of a filterable virus with the Negri bodies representing degeneration of the neurofibrillae, surrounded by a fused material derived from degeneration of the mitochondria.

The most important etiological factors are:

Site of Injection: Following the work of Goodpasture, it is now conceded that the virus travels from point of entry by way of the perineural lymphatics, or along the axis cylinder of the nerve trunks, to the central nervous system. Thus the nearer the site of injection is to the central nervous system the shorter the incubation period.

Age: Children, due to their friendliness with animals, their lack of suspicion and inability to protect themselves, are more frequently infected. Because of their height, extensive lacerations of head, neck and wrists are more common and they are thus more likely to contract the disease, even following intensive treatment.

Species of Animal: Bites of wolves are considered most dangerous, with face bites showing a mortality of 80-100 per cent. Cat bites about face have a mortality of 70 per cent, while dog bites in this region have about 60 per cent mortality.

Physical Condition of Patients: Persons suffering with any debilitating disease are more apt to develop rabies due to the slow production of immune bodies following treatment.

There is nothing characteristic in the gross pathology. The brain shows congestion and hemorrhage of the small vessels. Histologically, however, we find the

round or oval acidophilic bodies, which have a central nuclear-like mass of basophilic material, and are seen chiefly in the large cells of the hippocampus major. There is also an associated perivascular infiltration of the blood vessels of the nervous system.

Distribution is universal except where measures have been taken to suppress transmission. England is one of the best examples of this measure. According to Frothingham: "In 1892 there were thirty-eight rabid animals in England. At this time the authorities listened to a petition of 'dog-lovers' and removed the 'cruel muzzle' with the result that during the next five years 1,602 dogs and fifty-one people died of this most agonizing disease known to the medical world."

This example is mentioned to show that the disease can be eradicated from any locality, or at least its spread prevented, even when neighboring territory does not enforce any muzzling laws.

There is not a seasonal distribution, as commonly thought. The disease may, and does, occur at any time of the year. Due to our habits during the warm months we more frequently come in contact with animals and thus our chances for infection are increased. Our own records show that during the past four years the greatest number of cases have been in January, with May second.

The incubation period is variable, with authorities claiming any time from eight days to one year. Factors influencing incubation period are site of injection, type of wound, specie of biting animal, virulence of virus, physical condition of patient, etc.

Symptoms of the disease come late at the end of the incubation period and are usually ushered in by mental depression, lassitude, anorexia and occasionally local symptoms at site of wound. This is followed quickly by the stage of excitement with mental symptoms pronounced. These symptoms may amount to a veritable maniacal furor. There is also an intense hyperesthesia of the sense organs and muscular system. Local spasms of pharynx and larynx, thus causing difficult deglutition and phonation. These spasms are followed by general convulsions, and fever is also the rule. If death does not supervene, the excitement stage is followed by paralysis, with face, tongue and eyes

chiefly involved; then collapse and death. After symptoms have developed prognosis is invariably fatal.

Diagnosis is based on examination of the hippocampus of biting animal. The animal, however, should not be killed at once, but caged for ten days and closely observed for symptoms. When animal dies, histological examination of brain is made for presence of Negri bodies. During this time patient should be given antirabic vaccine.

The disease must be differentiated from hysteria, tetanus, epilepsy and ascending myelitis (especially from terminal stage of rabies).

The following are examples in which it is advisable to immediately institute vaccine therapy:

1. Any person bitten by animal which has been proven to be rabid by clinical and histological methods.

2. Persons whose hands or face have been contaminated with saliva of rabid animal, even though no visible breaks in skin.

3. Persons bitten by stray animal which cannot be located.

4. Persons bitten by animal whose actions have been clinically suggestive of rabies should take treatment while waiting for death of animal and histological report.

The most important single procedure in the treatment is prompt cauterization of the wound with fuming nitric acid. Experience has proven that carbolic acid, iodine, silver nitrate, etc., have little value on these wounds as compared with fuming nitric acid.

The next procedure is the prompt administration of vaccine. By far the majority of treatments on the market today are composed of killed virus. Injections are given daily for a period of fourteen days, except in cases of face bites, deep wrist bites, or when treatment has been delayed. In these cases vaccine should be given twice daily for several days, depending on the need for rapid immunization, with a total of at least twenty-one injections. These are given subcutaneously, preferably in the soft tissues of the abdomen. Patient should be instructed to maintain ample elimination, avoid alcoholic beverages, exposure to cold and excessive fatigue.

It is advisable to explain the reasons why therapy should be instituted as soon as possible. The reasons are, briefly:

1. Treatment is strictly preventive and not a cure.

2. All patients do not have the ability to produce large quantities of antibodies. This ability is directly proportional to the physical condition of the patient.

3. The highest point of immunity is not reached until approximately two weeks following the last injection.

The government does not consider that the vaccine has failed to produce sufficient immunity if the patient dies within two weeks following last injection. The laboratory making the vaccine is, however, charged with a death if the patient expires more than two weeks after last injection.

There are a few important points that should be emphasized:

Face and wrist bites, due to proximity to central nervous system, carry a very highly mortality. Of all deaths due to rabies approximately 90 per cent are the result of face bites.

Rabies virus is eliminated through the lacrimal and parotid glands and possibly by the breast (yet no human case reported from milk). The virus in the saliva rapidly loses its virulence when exposed to the air or when heated to 50 degrees C for one hour. The saliva of rabid animals is not virulent earlier than nine days before appearance of active symptoms.

A small percentage of cases develop a post-vaccinal paralysis. The present killed virus type of vaccine, however, has resulted in fewer cases of paralysis than the old attenuated virus of Pasteur.

Federal statistics show that of all persons definitely inoculated with rabies virus, the disease develops in only 16 per cent of the untreated cases, and in 0.7 per cent of the treated cases.

Rabies is not a seasonal disease, as commonly thought.

Each of the following case reports emphasizes some of the important factors encountered in the treatment of rabies.

The first case is one in which there was a delay of two weeks in treatment. The report is written by the father, and the following is a portion of his letter:

"Saturday noon he complained that he

was weak. Three hours later he became nauseated. He soon fell into a stupor. He could not keep a drop of water on his stomach. Every five or six minutes he would yawn. Next day this turned into a gag. He was restless, tossing from one side of the bed to the other. All day Sunday he was restless and became more so as the day passed on and through the night. Monday morning he was worse. He could not drink water. The sight of water frightened him. He had great mental stimulation. He was alert to every sound. He was highly sensitive to touch. He was perfectly conscious until four or five in the afternoon. Then he grew mad. He had to be held by the doctors until they would quiet him with the chloroform. One hour later the end came quietly."

In this case rabies developed faster than the patient's immunity, which stresses the danger of delayed treatment. Also, the wound was not cauterized with fuming nitric acid.

The next case report was submitted by the attending physician, and is as follows:

"On or about October 13th he was bitten on the leg, arm and in the mouth, under the upper lip. They brought him to the hospital immediately, and these wounds were cauterized with pure carbolic acid, followed in about two minutes with alcohol. We received head report the following day and started the administration of the antirabic serum. On the fifteenth day after the bite the patient had a temperature of about 100 and looked as if he might have the 'flu,' and he stated that he felt as if he might be contracting the influenza. I felt some uneasiness at the time, but merely administered a course of liver medicine, hoping that it was only a bad cold. He vomited everything that he put in his stomach during the following twenty-four hours. On the afternoon of the second day of his illness his fever was about 102 degrees and he developed a deep sighing respiration about every fourth or fifth breath. And at this time he had an unusually hard bounding pulse. The character of the respiration and pulse, the congested appearance of the ocular conjunctiva made me exceedingly apprehensive. He told his mother at this time that he thought he had 'that disease'. On the third day he was running a temperature of about 102½ degrees. The condition of the pulse and the sighing respirations became greatly aggravated and he was not able

to sleep at any time during the day or that night—the convulsions developed at midnight that night.

"In the afternoon of the third day he informed me that he felt like choking every time he tried to take medicine or a drink of water, and I noticed his nervousness and tossing of his head from side to side was growing worse. They called me at midnight after he developed convulsions, and Dr. ——— and Dr. ——— and myself, one or more of us, was with him constantly until he died at 5:00 P. M. on the following day. When I arrived soon after midnight he was in a very highly nervous condition, looking very wild out of his eyes, and when I walked into the room he would go off into a convulsion and toss his head from side to side. He warned his mother not to get too close to him, as he might bite her. His mentality during this time was uncannily acute. He wanted me with him constantly, but every time I returned after leaving his room he would go off into a screaming convulsion and throw his head from side to side. Neighbors had to sit on the bed and hold his hands and feet from the time he developed convulsions until a short time before he died. We had to keep him filled with morphine and sometimes hyoscine in order to keep him quiet, and he gradually lapsed into a comatose or semicomatose condition and quieted down and died that afternoon."

In this case we have a definite face bite, which requires the most vigorous treatment. Although treatment was started at once, the patient was not given extra doses the first few days, and a total of only fourteen instead of twenty-one doses.

The last report is that of an old poliomyelitis case, given by the attending physician:

"On the morning of October 8th, while on her way to school with other children, M—— noticed a cat lying by the side of the road and remarked to the other children, 'what a pretty cat,' and walked over to pet it. The cat seized her hand, biting and scratching it. She knocked it loose with her books and it ran away through the woods.

"She returned home and a doctor was immediately called. Examination showed lacerations of the thumb, the thenar eminence, wrist, and forearm, both bites and scratches. The wounds were cauterized

with a 10 per cent silver nitrate and a mercurochrome dressing applied. Rabies vaccine was given immediately. For four days she received rabies vaccine twice a day. After that once a day until sixteen shots had been given. The wound healed rapidly.

"During this period she began having chills and fever. Diagnosis of malaria was made, and she took quinine for two weeks; all malaria symptoms disappeared.

"On November 2nd she began to complain of pain and numbness in the right arm, which was the one bitten by the cat. The arm and hand was baked by the infra red light. Malaria examination was negative and she was stopped from school.

"On November 3rd she had a slight temperature and was very nervous and excited. She was put to bed and was given sedatives. At this time she developed some difficulty in swallowing, and a clinical diagnosis of rabies was made. Difficulty of swallowing became more marked on the afternoon of the third and she began to develop a phobia for water, convulsions developed, consciousness was lost about 2:00 o'clock of November 4th, and she died at 4:45 P. M. without regaining consciousness."

This case shows the lack of antibody response, due to debilitated condition of the patient (old poliomyelitis plus questionable malaria). The wound was not properly cauterized. Vigorous vaccine therapy was instituted with, however, only sixteen doses, where twenty-one doses were indicated.

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ACUTE APPENDICITIS IN PHILADELPHIA; REPORT OF PROGRESS MADE IN CAMPAIGN FOR ITS REDUCTION

In his report of the progress made in the campaign for the reduction of acute appendicitis during five years (1928-1932), John O. Bower, Philadelphia (Journal A. M. A., March 17, 1934), presents tables giving the diminished number of cases of spreading peritonitis, the relation of time of hospitalization and mortality, the diminished number of peritonitis cases, the history of laxatives and the decreased mortality of local peritonitis. He gives the following factors that entered into the diminished mortality during 1932: (1) a marked increase in the number of cases over preceding years; (2) earlier hospitalization; (3) a diminished number of cases of peritonitis; (4) a diminished number of cases of spreading peritonitis; (5) an improvement in the management of spreading peritonitis by the surgeons of Philadelphia, and (6) less frequent administration of laxatives.

TREATMENT OF EARLY SYPHILIS

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By early syphilis, I mean the treponema pallida infection of less than two years' duration.

From the appearance of the initial lesion until the disappearance of the secondary eruption is considered as acute early syphilis; after this stage until the end of the second year is regarded as chronic early syphilis.

Many of the cases in the chronic early stage of syphilis are designated as early latent, which merely indicates a chronic syphilitic infection with positive serological findings, without any demonstrable pathological changes that can be attributed to syphilis.

The acute early stage of syphilis is subdivided into sero-negative and sero-positive. However, it is a mistake to treat sero-negative cases with one or two short courses of treatment, because a large per cent of the sero-negative cases will become sero-positive during the first one or two weeks of intensive treatment.

Although the incidence of relapse in sero-negative is less than sero-positive primary syphilis, the per cent is too small to justify any appreciable reduction in the duration of treatment.

The immunity of syphilis is not understood; however, there is an agreement that the disappearance of primary and secondary lesions, resistance to re-infection, and the decrease in the number of treponema pallida in latency without treatment, indicates a great deal of resistance on the part of the patient.

The value of this resistance on the part of the patient has caused some physicians to withhold arsphenamine until the end of the secondary period.

This practice should be condemned, as we know mercury and probably bismuth will not control the infectiousness of the lesions and in those cases in which the lesions were non-infectious their action is too slow, and every patient with early syphilis would be highly infectious for six months to two years.

Every genital lesion should be regarded with suspicion; an extragenital lesion of a slow course, little or no pain, induration

and accompanied by enlargement of the adjacent lymph glands should be considered syphilitic until proven otherwise, by dark-field examination of the serum from the lesion, or aspirated from adjacent lymph glands and Wassermann blood tests.

Anti-leptic treatment, particularly arsphenamine, should not be instituted until proven syphilitic, except cases in which all laboratory tests have failed and the clinical manifestations are suggestive of syphilis, then the patient should not be told that he has syphilis.

I do not know of any case more difficult to treat or advise than one that has been treated for syphilis without serological tests to confirm the diagnosis, particularly so if the patient has been treated in a clinic of questionable efficiency.

We know that the earlier treatment is begun, particularly with arsphenamine intravenously, the better the chance of preventing a general dissemination of the treponemata in the various organs of the body, but not to the expense of subjecting a small per cent of patients who do not have syphilis, to the continuous medication with arsphenamine and the heavy metals for one year.

Some physicians administer arsphenamine intravenously as a tonic, apparently not realizing the hypersensitiveness of some individuals to arsphenamine, which is capable of producing such serious reactions, fortunately very uncommon, as blood dyscrasias, hemorrhagic encephalitis, transverse myelitis, arsenical dermatitis and jaundice; as well as the more common reactions as prolonged gastro-intestinal disturbances and nitritoid crises. As practically all severe reactions appear during the first four or five injections of arsphenamine, even though minimum therapeutic doses are given, it should not be given unless specially indicated.

There is a great deal of discussion as to which branch of medicine has a claim to the treatment of early syphilis; no specialty has prior claim, unless it be the public health service, on account of the infectiousness and contagiousness of the disease.

In England, Germany, Denmark and Belgium where treatment for syphilis is given principally in the clinics under the control of the government, there has been a marked decrease in the number of new

infections, in contrast to France and the United States, where treatment is given mostly by private physicians and private clinics, the new cases are increasing. These new cases of syphilis will continue to increase until we have trained public health officials with legal power to investigate and control all venereal clinics and laboratories and sufficient money to establish modern clinics for charity and part pay patients.

The physician should consider the responsibility of treating a case of early syphilis equal, if not greater, than the care of a person with diabetes or an acute appendicitis, because his mistakes, if any are made, cause a relapse; a highly infectious state appears, endangering the health and happiness of others.

After a positive diagnosis is made in a case of early syphilis, an examination must be made of the heart, lungs, kidneys and skin, in order to estimate the amount of treatment that may be tolerated with safety.

Individuals with a seborrheic background, eczema and attacks of urticaria, do not tolerate arsenic as a general rule.

After the diagnosis of syphilis is confirmed by the laboratory, before treatment is instituted, is the proper time to attempt to impress upon the patient's mind the seriousness of the disease, and to explain the importance of continuous treatment for at least twelve months in order to have the best possible chance for a radical cure.

The patient should be informed as to what we mean by cure; that is, the difference between a clinical and a radical cure; also to estimate his chances for a radical cure.

According to the cooperative clinical study of Moore, Stokes, and others, untreated cases of early syphilis have twice as good a chance as inadequately treated cases, for a biologic, symptomatic, and serological cure.

I think it is advisable to tell the patient that unless he will continue treatment regularly for at least six months that it would be far better for him to depend on his own resistance, to go away and hibernate, in order to prevent the dissemination of the disease to others.

While under treatment the urine should be examined at least once a month; the sclera and skin observed closely for evi-

dence of jaundice, and the patient questioned in regard to any reaction following the previous treatment, particularly itching or any cutaneous eruption.

The Wasserman blood test should be made at the beginning of each course of arsphenamine to determine the effectiveness of the drugs employed. A persistently positive blood Wassermann reaction indicates neurosyphilis.

Spinal fluid examination should be made at the beginning of the third course of arsphenamine to determine any abnormality of the spinal fluid.

According to the investigation of Wile, thirty per cent of the cases of secondary syphilis have an abnormal spinal fluid and are candidates for neurosyphilis.

Hopkins' report on four hundred and five cases observed from three to ten years showed that cases with a normal spinal fluid in late secondary and early latent syphilis develop neurosyphilis in less than three per cent of the cases studied.

The patient must be advised of the importance of a spinal fluid examination in order to make a more accurate prognosis, as well as to indicate the method of future treatment.

All stages of syphilis, except the initial stage, should receive two or three injections of bismuth or mercury previous to the administration of arsphenamine intravenously to prevent a Herxheimer reaction, possibly making an exception in certain patients who would be a menace to society.

Until recently, we did not have a standard treatment for early syphilis which was generally accepted; most textbooks endorse an individual rather than a system.

A system is more effective in early syphilis, as the disease is usually contracted between the ages of fifteen and thirty-five, at a period in life in which the organs of elimination will tolerate the continuous administration of moderately large doses of arsphenamine, alternating with bismuth or mercury.

I do not think bismarsen should be used in early syphilis, due to its slow action and the simultaneous employment of two drugs.

If you administer two drugs simultaneously you are compelled to reduce the dosage of each, as both drugs are accumula-

tive, arsphenamine being toxic for the liver and bismuth toxic for the kidneys, making a rest period imperative.

Another objection to the simultaneous use of two drugs is the possibility of the production of drug-fast strains of organisms. Klauder demonstrated, by animal experimentation, a gradually acquired tolerance of spirochetes for anti-syphilitic drugs. At the conclusion of the first course of arsphenamine the patient has little, if any, natural resistance to control the disease, and is left in a state of dangerous relapse, especially neurorelapse.

Due to the slow action of bismuth or mercury, it is advisable to overlap the last two or three weeks of the arsphenamine course. Bismuth or mercury should be administered at least four weeks, to allow time for the elimination of the arsenic, but not to exceed eight weeks, because of the danger of relapse.

Bismuth has largely replaced mercury as it is less toxic and has a greater spirochaeticidal effect, although its value as a tissue resistance builder has not been established.

I have used the terms arsphenamine and neo-arsphenamine synonymously. The arsenic content of arsphenamine is one-third greater than neo-arsphenamine, but is two and one-half times more toxic.

The simplicity of administration and lowered toxicity have been the principal factors in the increase in the popularity of neo-arsphenamine by physicians and patients.

The greatest disadvantage of neo-arsphenamine is the lack of stability, which can be prevented by using a standard brand that is fresh and has been kept in a cool place. The toxicity of neo-arsphenamine can be reduced by preventing oxidation from shaking during the preparation of the drug and not allowing the solution to stand. The distilled water used for dissolving the drug should be double-distilled and cooler than lukewarm.

Sulpharsphenamine should rarely, if ever, be administered, in lieu of the high percentage of severe reactions, particularly exfoliative dermatitis and encephalitis.

I will give my method of continuous treatment for early syphilis in otherwise healthy young adults, which is similar to the method of Keidel. This was first introduced at John Hopkins' syphilis clinic

in 1916, but did not appear in current medical literature until 1926. This method has recently been adopted by the co-operative clinical group.

Primary Syphilis: Sero-negative or sero-positive stage, regardless of sex: The first injection of neo-arsphenamine 0.3 gm., increase to 0.6 gm. on the third and sixth day; repeat the latter dosage every five to seven days until ten injections have been given, then the alternating of bismuth salicylate in oil, grains two, intramuscularly, with the neo-arsphenamine for two weeks. Stop arsphenamine, give bismuth intramuscularly twice weekly for four weeks.

Second Course: Same as first, except increasing the course of bismuth from four to six weeks.

Third Course: Same as second, except completing the treatment with sixteen injections of bismuth twice weekly.

Secondary and Early Latent Syphilis: Preparation of the patient with mercury succinimide, grains 1/6, intramuscularly on three successive days preceding the initial injection of neo-arsphenamine; continuation of the first, second and third course the same as the primary stage, except the addition of the iodides, grains three, three times a day before meals, increasing three grains daily for two weeks preceding each course of neo-arsphenamine.

Fourth Course: The neo-arsphenamine administered the same as the third course. Mercury succinimide grains 1/6, intramuscularly five times weekly instead of bismuth for a period of eight weeks. Stop treatment if the patient is free of all clinical manifestations of syphilis, and all serological tests have been negative during treatment. Encourage the patient as to his excellent chance of a radical cure, but insist on a yearly physical examination and blood Wassermann test.

SUMMARY

1. Confirm the diagnosis of lesions of early syphilis by serological tests before beginning treatment with arsphenamine.

2. Prevention of severe reactions as far as possible by a careful physical examination, urinalysis, and the preparation of all cases of syphilis, except those in the primary stage, with mercury or bismuth before the administration of arsphenamine.

3. Endeavor to impress upon the pa-

tient's mind the seriousness of the disease and explain the importance of continuous treatment for a period of one year.

4. Acquire a habit of observing the sclera and skin for evidence of jaundice, as well as questioning the patient as to reactions following the previous treatment.

5. Think of neurosyphilis in all patients with a persistently positive blood Wasserman reaction.

6. Consider one in every three or four cases of secondary or latent syphilis, regardless of the Wasserman reaction of the blood, a candidate for neurosyphilis, and that a spinal fluid examination is the only means of making a diagnosis of neurosyphilis in a very large per cent of the cases.

7. Rely on arsphenamine intravenously to cure as well as to control the infectiousness and contagiousness of early syphilis, and to depend on bismuth and mercury to inhibit the virulence and multiplication of the treponemata, until the host has had sufficient time to eliminate the arsenic and the organisms to lose their tolerance for the drug.

8. In early syphilis, treat *systematically*, and not *symptomatically*.

SUPPURATIONS OF THE PETROUS TIP

According to Edmund P. Fowler Jr., New York (Journal A. M. A., May 19, 1934), petrositis is much more common than is generally supposed. Meningitis often brings patients with petrositis to the general medical man or neurologist. The eye symptoms occasionally bring him to the ophthalmologist. Petrositis should be considered in the presence of trigeminal pain, abducens paralysis or an aural discharge after a well executed mastoidectomy. Petrositis should be watched for on the affected side if the mastoid and zygoma on either side is highly pneumatized. The two sides usually pneumatize in the same fashion. If one side becomes sclerotic, especially about the antrum or hypertympanic region, this sclerotic bone may cut off drainage from the deeper and more pneumatized portions of the bone and so lead to pockets in the mastoid or petrosa. Partial pneumatization may lead exudate into the tip, where it may pocket or extend into the marrow spaces to produce an osteomyelitis. Petrositis usually subsides spontaneously with adequate drainage from the middle ear. If this is not facilitated by the ordinary mastoid operations, further curetting, especially in the peritubal and perilabyrinthine regions, will often uncover a pocket of pus. Inadequate drainage of the petrosa may result in a chronically discharging ear or meningitis and death. The method of invasion of the meninges may be manifold, either directly through a subdural abscess or through the veins draining the area, through the labyrinth, through the carotid sheath or through the blood stream.

THE ACUTE SURGICAL ABDOMEN IN EVERYDAY PRACTICE*

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The purpose of confining this paper to the above subject is due to the appreciation that many men in general practice, or those who are yet young in the practice of surgery, either sit in on our sections or else read these theses when published in the Journal. For this reason alone it is thought that the more practical discussion of this subject as it affects the average doctor in everyday practice will be conducive to the most good. Therefore this paper will be confined to those acute abdominal conditions, requiring surgical intervention, that one would expect to and does see in the course of the common run of everyday practice—those conditions that any active doctor is bound to see at fairly frequent intervals.

First in the category is our ever present acute appendicitis, with all of its potential seriousness if not recognized early and treated surgically in the best accepted manner.

To many of you I am sure that the mere mention of appendicitis, which is so common, in this state at least, gives you a feeling of ennui, but nevertheless it takes in Oklahoma an enormous toll of lives yearly, this in spite of the fact that every doctor is expected to be able to readily recognize it and institute the proper surgical treatment immediately. You only have to check the records of the hospitals of the state to become alarmed at the large amount of preventable morbidity and mortality due to preoperative neglect or bad handling of this very common abdominal disease. It is certainly evident that many of our doctors are yet dilatory in advising an early operation, which in many cases is actually life-saving. We, too, have some timid surgeons who advise temporizing and waiting unless the symptoms are actually alarming.

The records of the State Board, Bureau of Vital Statistics, show the number of annual deaths from appendicitis in the last decade as follows: 285, 314, 308, 302, 304, 597, 368, 389, 282, 273, 306 (1923-1933, inclusive), a grand total of 3,728.

When one seriously considers these fig-

ures he is chagrined at the appalling number of unnecessary deaths, and wonders just what percentage of these deaths can be laid directly to the temerity or timidity of the Oklahoma medical profession. With this state of conditions before us it is obviously the duty of every physician, whether he be a general practitioner or surgeon, to be more determined in advising and in the handling of these cases. He should also avail himself of every opportunity to educate the lay public as to the necessity of an early diagnosis and operation in cases of acute appendicitis, teaching them that early clean cases are operated on practically without danger; that it is the late unrecognized or deferred case that results so often in death or tragic complications. That in the early operated cases the period of hospitalization is shortened to as little as a week or ten days with very little chance of post-operative complications. While on the other hand the delayed case often proves fatal, and if not, it entails extra weeks of hospitalization, special nursing care and subsequent frequent complications that often necessitates secondary operations for intestinal obstruction, hernia, etc. So let's not smile at such a common yet so serious an illness as acute appendicitis, but let us become missionaries to educate both doctors and the laity that acute appendicitis demands an immediate operation regardless of the apparent mildness of the case.

The next most frequent abdominal condition requiring immediate surgical relief is ileus—most generally post-operative in the adult and intussusception in children. Due to the vast number of people who have been operated on for inflammatory conditions in the abdomen necessitating drainage, intestinal obstruction is a frequent complication due to adhesion and small inflammatory bands that may show the first symptoms years after the original operation. Old herniae are also often the source of sudden bowel strangulation or obstruction. The symptoms that are produced by ileus in an erstwhile healthy patient is, of course, severe pain in the epigastrium usually accompanied or followed by nausea and vomiting, the onset of the latter depending upon the distance of the obstruction from the pylorus. The more distally the obstruction is located, the later the nausea and vomiting is in developing. The location of the obstruction in the alimentary tube also greatly affects

*Read before annual meeting of Oklahoma State Medical Association, Tulsa, May 21, 22, 23, 1934.

our prognosis of ultimate recovery in reference to the time lapsing between the development of the actual obstruction and that of relieving the ileus. More distally the obstruction, less acute is the absorption of toxins that result fatally if permitted to go too long, and conversely, the higher the obstruction, greater the danger of delaying operative removal of the cause.

In intussusception in younger children the disease most frequently follows drastic purging, although it frequently develops suddenly in an apparently normal child. The most frequent site of the lesion is at the ileo-cecal junction. The symptoms of this condition are so well known that mention of the more prominent will suffice. Gastric distress, nausea, vomiting, bloody stools after enemata has cleansed the colon. Appearance of the typical sausage shape mass that can easily be palpated in experienced hands, and later, upper abdominal distension. The mortality in this condition is very high. A quick diagnosis and early operation offers the best and almost only hope of recovery. The reason I say *almost* here is because I have seen two cases that came in so late that operation was refused, spontaneous amputation followed by rectal expulsion of the entire mass with complete recovery. However, these infrequent instances of the wonderful work of nature should not influence anyone to wait and hope for it to occur, for it is entirely too rare.

Probably next in frequency comes our perforated ulcers in the male and ruptured tubal pregnancy in the female. Just a word of warning here concerning the immediate diagnosis and early operation in these cases. In the perforated ulcer case, one with little experience is often fatally misled by the apparently good condition of the patient. Aside from the excruciating pain and board-like abdomen, the symptoms belie the seriousness of the true condition. When seen early the pulse and temperature are practically always normal and there is no vomiting unless there is bleeding into the stomach and duodenum. These three facts alone have caused many physicians to delay the diagnosis until a marked peritonitis has developed, making the operation hazardous and the chances of recovery small. The earliest operation possible in perforation holds the greatest hope of recovery. Indeed, if performed in the first two or three hours following the actual perforation, recovery is to be expected.

In ruptured tubal pregnancy the symptoms are almost as classical. A sharp pain in the pelvis with rapidly developing shock, a history of incomplete menstruation at the last one or two periods, a palpable mass on either side of the uterus is pathognomonic and immediate opening of the abdomen should be done before the patient becomes exsanguinated.

This brings us to the acute empyemic gall bladder with its consequent chills, high fever and gastric distress. The diagnosis is comparatively easy and due to the danger of spontaneous rupture or the formation of pericystic abscess, early operation is not only logical but imperative.

Stab and gunshot wounds of the abdominal wall, unless absolutely known to be superficial, demand the immediate opening of the abdomen for exploratory purposes, regardless of the absence of symptoms of internal injury, for many times perforation of viscera is present with apparently no symptoms that would lead one to suspect internal injury.

If at all in doubt as to the probability or non-probability of a perforating wound in the abdominal wall, have the abdomen opened immediately by a competent surgeon to ascertain the true condition. This does no harm and might save a life. Never be guilty of probing a wound (as was the custom of our forefathers) in an endeavor to see if it enters the peritoneal cavity. This is highly dangerous and only adds insult to injury.

When confronted with any of the above mentioned fairly common conditions, let's be keen and alert, exercising our common sense, backed by a preponderance of actual experience and authoritative precedences. If we will conscientiously and religiously do this, our morbidity and mortality rate will rapidly diminish.

DISCUSSION: *Dr. Pat Fite, Muskogee.*

A paper such as the one just read by Dr. McGregor is always a fitting reminder of these constantly recurring emergencies and all of us should be continually on the lookout for the almost always unmistakable symptoms of these conditions. It is far better for a physician to make the mistake of sending a suspected case of appendicitis, perforated duodenal ulcer or any like condition to a surgeon early and after examination have it turn out to be a pyelitis or some other non surgical condition, which may be picked up through

further observation and diagnosis, than to make the mistake of holding one of these dangerously acute surgical conditions past the limit when nothing can save the patient. It is far better for perforated duodenal ulcer or acute intestinal obstruction to be operated upon by a mediocre surgeon in the first six hours than for that same condition to be operated upon by the best surgeon in the world in forty-eight hours.

It is a peculiar thing, as pointed out by the essayist, that the mortality of acute appendicitis has not decreased in the past ten years. This is not a mortality of operative procedure, but a mortality of infection due to delay. Similar or allied qualities are responsible for the mortality in the other conditions described. Doing as he does a general surgical practice in an essentially rural community, I feel sure that he speaks feelingly in referring to the conditions described and does so because from time to time, all too often, he is called upon to operate or care for patients in which the case is almost hopeless but might have been a small and safe procedure had he seen it twenty-four or forty-eight hours sooner.

It behooves especially every general practitioner of medicine to acquaint himself with the initial symptoms of all these conditions because by doing so throughout his medical career he would have saved many a life that otherwise might have been sacrificed.

ARTIFICIAL TRANSMISSION OF MALARIA AMONG INTRAVENOUS DIACETYLMORPHINE ADDICTS: PRELIMINARY NOTE ON USE OF ATABRINE IN MALARIA

Emanuel Applebaum and Ben B. Gelfand, New York (Journal A. M. A., May 19, 1934), observed ten cases of malaria, artificially induced, due to or suggestive of intravenous diacetylmorphine addiction. Atabrine was given by mouth to only three patients. The response to this form of therapy was prompt. Within from twenty-four to forty-eight hours the temperature dropped to normal, and within four days the blood smears failed to show schizonts. Atabrine was administered intravenously to three patients. In one case the atabrine was used after the patient apparently failed to respond to the intravenous use of quinine. There was rapid improvement after its use. Atabrine failed to destroy the estivo-autumnal gametocytes. Two patients suffering apparently from cerebral malaria failed to respond to intensive intravenous atabrine therapy. The treatment of the pernicious form of the disease merits further study. The authors observed no untoward results from the use of atabrine, with the exception of a slight yellowish discoloration of the skin in one instance. This, however, cleared up within a week. It is their impression that this drug is a valuable adjunct to quinine and, in their opinion, deserves further trial.

ANAL ABSCESS AND ANAL FISTULA*

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Pathologic processes occurring in the terminal portion of the colon and anal canal present many interesting problems. Few of these processes are more evident and, in general, few lead to more confusion than the presence of acute perianal abscess or its successor, anal fistula.

Anal abscesses have been variously classified¹: the superficial, including tegumentary, subtegumentary, and ischiorectal abscesses, and the profound, including retrorectal, superior pelvirectal and interstitial abscesses. Evidently all of the types cannot be dealt with individually within the limits imposed in this paper, but for practical purposes detailed classification is not essential. With the exception of tegumentary abscesses, which are usually due to infected comedones or to other forms of follicular inflammation, it can be said that the etiologic factors are uniform. Similarly, the fundamental principles underlying the treatment of these abscesses are reasonably uniform.

Anal fistulas are classified, in a manner parallel to that cited for abscesses: complete, blind or incomplete, subtegumentary, submucous, and simple or complicated. Usually a fistula is preceded by an abscess, and the type of fistula depends on the depth of the abscess and its ultimate point or points of drainage.

To understand the etiologic factors properly, it is necessary to review, at least superficially, the normal surface anatomy of the region. Within the anal canal, 0.5 to 2 cm. from the anal edge, is a definite landmark, the dentate margin or pectinate line. This is an irregularly annular line that indicates the point of juncture of the proctodeum and hindgut and, with its papillae and closely associated columns and crypts, marks a point of sharp differentiation between the skin and mucous membrane. This landmark is plainly visible, and it offers the only anatomic justification for the comparatively frequent occurrence of anal abscesses and fistulas. The anal crypts are tiny pockets which normally dip slightly behind the dentate margin. Probably as a result of the me-

*Read before the Southern Oklahoma Medical Association, Ada, Oklahoma, March 6, 1934.

chanical requirements at the time of the fusion of the proctodeum and the hindgut, the widest part of the crypt is directed upward. Because of the direction and disposition of the crypts, they are easily traumatized and infected.

The patient usually seeks medical assistance because of the presence of an abscess, but two important developments have usually preceded this painful formation. The first is infection of an anal crypt, and the second, burrowing of the infection into the perianal tissues. This process may be encouraged by the microscopic sinuses⁵ that normally seem to be present in the deepest portion of the anal crypts. Occasionally a patient may be encountered who was conscious of the discomfort that commonly accompanies cryptitis antedating the abscess, but such a case is the exception rather than the rule. The next phase of the condition is development of the abscess and, finally, spontaneous rupture or surgical incision of the abscess, at which time the fistula is completed. Justified by the order of events as outlined, Buie has suggested that the internal opening be called the "primary opening" and the external opening, the "secondary opening".

The type of abscess depends on the depth to which the infection and abscess burrow and on the tissues involved. The path of the extending infection is often altered by the presence of muscle spasm or scar tissue, or by any abnormality that might act to deflect the process deeper or more superficially. It would also seem advisable to state that abscesses, which present or point within the rectum and rupture leaving a chronic opening at the site of rupture, follow the same primary steps as those outlined for the more common or external types of fistula.

TREATMENT

If the abscess is seen early, that is, before there is definite fluctuation, it is advisable to urge rest and the application of hot packs. It may also be necessary to administer some sedative because of the pain. These measures are imperative because they permit the formation of an ample protective wall about the inflammatory process and eliminate the possibility of generalized infection, a risk that must be considered if the abscess is prematurely incised. Cold packs are occasionally applied in an effort to abort the formation of an abscess, but they prove to be of lit-

tle value in treating anal abscesses. Such packs may temporarily retard the progress of the abscess, but they prove valueless in the effort to avert ultimate rupture and formation of fistula.

Incision is indicated as soon as the abscess points, or as soon as there is definite superficial fluctuation. It is essential that the incision be deep and wide enough to permit free drainage. The abscess can often be incised without anesthesia if the incision is deftly and confidently performed and the patient is cooperative. I mention this because patients will often complain more of the infiltration anesthesia than they will of pain of the abscess, and will shrink from regional anesthesia because of this experience. It is also of paramount importance, if a digital examination of the rectum is made before the incision, or if digital exploration of the abscess cavity is made at the time of the incision, that these be performed with the utmost care because of pain and the risk of spreading the infection.

Usually it is hazardous to attempt to prevent formation of a fistula when dealing with an acute abscess because of the extent of the surgical procedure required to complete such an attempt. The policy to be adopted at this time is one of patience. Waiting permits nature to complete the protective wall she places around these acute infections, and also allows the cavity to contract. This frequently necessitates an operation on a small sinus rather than the more extensive operation required earlier. It is almost universally assumed that the proper method of treatment after incision of an abscess is to pack the cavity and, after the first packing is removed, to replace it with gradually decreasing quantities of gauze. The only justification for this method is the widespread belief that if the cavity is packed sufficiently and frequently enough, a fistula can be avoided. This procedure, however, not only leads to very dubious results, but also demonstrates a lack of understanding of the underlying etiology and of the steps leading to the formation of an abscess and, subsequently, to that of a fistula. In general, it can be truthfully said that once an abscess has formed, it is almost impossible to prevent formation of a fistula except by an operation that is more radical than is indicated or safe at that particular time. The pain caused by such dressing is an extravagant price to pay for such improbable results.

Maintenance of ample drainage and the stimulation of healing by the application of hot, wet packs is all that rationally can be attempted in the present state of medical knowledge. A fistula after anal abscess occurs more frequently than is generally admitted.

OPERATION

Surgical excision must be considered after the acute process has subsided and a fistula remains. The preparation for such an operation can be accomplished satisfactorily with small enemas of oil and water and several cleansing enemas. Sacral anesthesia⁴ has proved very satisfactory for this operation because it provides ample anesthesia with satisfactory relaxation and a minimum of untoward reaction or of postoperative complications. The ventral prone position is more comfortable for the patient and insures better exposure than some of the positions more commonly employed, and if a transverse bar, or so-called kidney rest, is placed at the level of the anterosuperior spines of the ilium, and the hips then elevated, it is possible to proceed under the most favorable circumstances.

The external, or secondary, opening is usually evident and it seems to invite surgical attack, but it seems much more logical to discover the primary opening first, in view of the etiologic importance of the lesion. Often the probe can be inserted into the primary opening and then passed readily through the remainder of the tract to the secondary opening. At times this cannot be accomplished readily because of an acute angulation occurring in the course of the sinus. For the guidance of those less familiar with anorectal diseases, it may be of assistance to estimate the relative frequency of location of the primary opening. It is found in the posterior median line in about fifty per cent of the cases, next most often in the anterior median line; in the remainder of the cases it is found on either one of the lateral walls of the anal canal. Goodsall suggested a rule that is not infallible but is of definite help in ascertaining where to search first for the primary opening. He stated: "All fistulae with their internal openings behind a line drawn transversely through the center of the anus, have their internal openings in the middle line behind; and that in cases in which the external aperture is anterior to this line,

the inner opening is directly opposite the external one."

Identifying the primary opening before operating on a fistula obviates much of the confusion attending these procedures. If the tract is simple, it should be uncovered to its full depth and the overhanging edges thus produced, removed. If the tract is complicated or angulated, or if multiple tracts exist, it is expedient to uncover the most direct sinus and then uncover the other tracts or branches. Careful examination of the tissue lining these tracts, and contrasting this tissue with the surrounding normal tissue, renders the use of dye-stuffs or pastes not only unnecessary but often a hindrance in the conscientious search for complicating sinuses.

The wounds should be permitted to remain wide open unless they are unusually long and will lend themselves readily to partial closure. This requires removal of the scar tissue occurring in the tract, after which primary closure may be attempted. It is inadvisable to continue the closure too close to the anal margin. This latter precaution is necessary to insure ample drainage of the wound and to prevent the formation of "pockets" in the closed portion.

If the original abscess occurred within the rectum and ruptured there, the same fundamental principles are carried out as in the external type. A probe or grooved director may be passed through the primary opening and then through the abscess cavity or sinus tract until the tip of the instrument emerges from the secondary opening, which in this instance will be higher in the bowel. After this has been successfully accomplished, the tissue lying between the probe and the lumen of the bowel must be incised, thus producing one common cavity. It is then advisable to place a continuous locked suture over the loose edge of mucosa formed by the incision. This will not only serve as a hemostatic suture, but will also serve to keep the edges of the wound separated and prevent "bridging" of the tissue that might lead to recurrence of the original condition. It is seldom necessary to operate on fistulas in several stages unless unexpected complications arise.

POSTOPERATIVE TREATMENT

The postoperative care of the wound after fistulectomy is vital to the success of the operation. Fistulectomy, for reasons now unknown, seems to suggest the

necessity of unceasing packing; this notion is not only erroneous but is laden with greater possibilities for harm than for good. At the completion of the operation a strip of iodoform or vaseline gauze may be placed in the wounds. This gauze should be removed at the end of forty-eight hours, or sooner, and from that time until the wound is healed, the edges may be prevented from adhering or bridging over by gentle traction, or by gently passing a small cotton swab through the full depth of the wound, beginning at the primary opening and extending to its most distal edge. Hot, wet packs may be applied to relieve pain and to stimulate healing. The anal canal should be irrigated with warm water (110° F.) after each bowel movement and a mild antiseptic applied to the external portions of the wound as well as to those portions of the wound within the rectum and anal canal. This routine must be followed until the part has entirely healed. The purposes of the postoperative treatment are to stimulate prompt healing with a maximum of comfort but with a minimum of permanent disability. Firm packing of the wound is often the cause of incontinence, because it interposes a band of scar tissue 1 to 3 cm. wide between the ends of the sphincter in those cases in which it is necessary to incise the fibers of the muscles in order to cure the fistula. The treatment I have outlined not only serves to prevent such adverse results, but permits the normal contraction of the scar tissue base, forming a thin band of scar tissue in which the fibers of the sphincter are fixed, and thus permits normal muscle action and produces a negligible amount of deformity.

COMMENT

The consideration of anal fistula invariably brings up the question of tuberculosis. It must be apparent that such a subject cannot be dealt with at length in a general consideration such as this, but several pertinent facts may be mentioned as general guides in this seemingly important complication in anal fistulas. There is little to guide one in the accurate diagnosis of tuberculosis prior to the operation, and fortunately these wounds usually respond satisfactorily to the postoperative treatment suggested, although possibly with less rapidity. Fortunately, also, tuberculous infection of fistula does not occur as commonly as was formerly believed. It seems probable that tuberculosis represents a secondary invasion rather

er than a primary infection and that, therefore, the same rules should be applicable to this type of fistula as are applied to infections with the ordinary pyogenic type of bacteria.

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TYPHOID IN THE LARGE CITIES OF THE UNITED STATES IN 1933

The twenty-second annual report (*Journal A. M. A.*, May 19, 1934), gives the number of deaths in the same ninety-three cities that have been included previously. The large New England cities again make an excellent record. The group as a whole reports a new low average for 1933, making it practically certain that the New England cities, with a population of more than 2,500,000, will not average one typhoid death per hundred thousand inhabitants in the current five-year period. The cities in the Middle Atlantic states show even greater improvement in 1933 than in the preceding year and record an average rate of less than one per hundred thousand for the second year in succession. The cities of the South Atlantic states have not done quite so well, as a group, Wilmington, Miami, Washington and Norfolk all showing increases as compared with 1932. The cities of the East North Central group again lead all other sections of the country in having the lowest typhoid average of any geographical division and increase their 1932 lead over the New England cities. The six cities of the East South Central states, with a population about one-eighth as great as the eighteen cities of the East North Central division, have registered a larger number of typhoid deaths in 1933 and a typhoid rate nearly ten times as high, viz., 4.91, in contrast to 0.55. The cities in the West North Central states did not fare quite as well in 1933 as in 1932, five of the nine showing a typhoid increase and two a stationary rate. The eight cities in the West South Central states show on the average a slight increase over the preceding year, although Tulsa maintains its perfect record and El Paso shows a substantial decrease. The cities in the Mountain and Pacific states average slightly less than in the preceding year, but the rates range more widely. In 1933, no city in the United States registered a typhoid mortality rate greater than 10 per hundred thousand. The typhoid mortality rate for 1933 reached the lowest point ever registered. The improvement probably is actually somewhat greater than the figures indicate, since the 1932 population estimate is used without making any allowance for possible increase.

PERIPHERAL VASCULAR DISEASES OF THE EXTREMITIES

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ADA

Interest in vascular diseases of the extremities has greatly increased within the past few years. Since Buerger's classic contribution separating thrombo-angiitis obliterans or pre-semile gangrene from other vascular diseases, our knowledge and understanding of these diseases have greatly increased and the treatment of them is proving most gratifying.

Diseases of arteries of the extremities may be divided into two main groups: organic and inorganic. The inorganic may be further subdivided into vasospastic and vasodilatory. The vasospastic conditions cause a constriction and lessening of the blood supply, while the vasodilatory produce a dilatation of the arterial lumens and increase in blood supply.

The patients with organic arterial disease are by far the more common. The inorganic diseases in the ordinary run of cases are extremely rare. In a series of 1118 consecutive cases of vascular diseases at the Mayo Clinic, Dr. Geo. Brown found approximately 37.2 per cent of them cases of thrombo-angiitis obliterans, 29.2 per cent cases of arteriosclerosis with occlusion, 7 per cent arteriosclerosis with diabetic gangrene and 9.7 per cent Raynaud's disease. The remaining cases were divided into arterio-venous aneurysms, trophic ulcers, thrombosis due to cervical rib, arterial occlusions due to emboli, and so forth. It may be seen from this classification that cases of vasodilatation are rare. Erythromelalgia is the most common example and it occurred in but 2.9 per cent of the cases. Dr. Brown did not include thrombo-phlebitis in this group.

Only the three most common diseases, namely, thrombo-angiitis obliterans, arteriosclerotic vascular disease and Raynaud's disease will be discussed in this paper. All three of these conditions can be readily diagnosed with but the use of the eyes, ears, and fingers. The important point is to diagnose them accurately and early in order that the proper treatment may be instituted.

Raynaud's disease may be termed a primary vasospastic disturbance. There is no known cause nor is there any demonstrable pathology present until late in the

course of the disease when ulcers and dry gangrene appear on the tips of the digits. The terminal arteries in this stage will be thrombosed.

Raynaud has laid down four diagnostic criteria that must be fulfilled ere a diagnosis can be made. These are: (1) Intermittent attacks of change of color of the skin of the distal parts of the extremities. (2) The involvement must be bilateral. (3) There must be no evidence of occlusion of the peripheral arteries. (4) Gangrene, if present, must be dry and limited only to the skin. To these four rules, Brown and Allen have added two more: (5) The disease must have been present for at least two years; and (6) there must be excluded any other disease to which the above findings may be secondary. The intermittent or three-phase color changes is brought on by either cold or some emotional excitement. The fingers or toes may turn red or white or blue. Each digit may be similarly affected, or one may be white while another blue. Bilateral involvement is self-explanatory. The condition may begin in both feet or both hands and later involve the unaffected members. Occasionally the lobes of the ears and tip of the nose is involved. If there is any evidence of absence of a pulsating vessel, the diagnosis of Raynaud's should not be made. Patients frequently will have little superficial ulcerations, due to gangrene of the tips of the digits. This is a late symptom, but the usual one that finally decides the patient to consult a physician. The fifth rule is added because frequently a case of Buerger's will start out indefinitely with color changes and little or no discernible diminution of the pulses. However, if the condition is Buerger's disease, there will be unmistakable signs and symptoms of vascular occlusion within two years. The sixth rule is added to rule out lesions of the spinal nerves, etc.

Added to these six criteria are additional secondary ones that are both helpful and interesting to observe. In the neighborhood of 90 per cent of these cases occur in women, especially in the third decade. The why and wherefore of this is not known. Another helpful symptom, or rather, lack of symptom, is the comparative freedom of pain. There may be some aching in the fingers or toes when those members become cold, and there is a certain amount of soreness in the tips of the digits when they become ulcerated, but the pain of claudication and the se-

vere rest pain of an organic lesion is lacking. If present, one must be extremely wary of diagnosing Raynaud's disease.

The clinical course of these cases is rather typical. The disease usually starts in a woman in the early twenties with recurrent episodes of color changes in the hands or feet, brought on by cold or emotional upset. The course may be slow or rapid. Either the hands or the feet may be first affected; it makes no difference. Usually these cases do not consult a physician until rather late in the disease when superficial ulcerations have occurred or scleroderma changes of the skin or arthritic changes in the joints are superimposed upon the color changes. In spite of the vasoconstriction there is enough blood supply to prevent massive gangrene. It should be the rarest sort of an occurrence for a case of true Raynauds to need an amputation.

Physical examination of these patients will not disclose a great deal. There may be superficial ulcerations of the tips of the fingers or toes, or scleroderma changes of the skin or arthritic changes in the joints. Color changes may be brought on by exposing the patient to cold. Examination of the peripheral arteries, such as the radial, ulnar, dorsal pedes and posterior tibial, should show them to be open. If one is absent it should be searched for again when the foot is warmer or the patient less excited, because frequently the spasm of the arterial muscle may be so great that it temporarily closes off an artery.

Treatment here, as in so many cases, depends upon the extent of trouble the patient is having. Early in the disease the patient may be interested only in the diagnosis. They may be told of the chronicity of their condition with the tendency of progression and warned of the possible dangers, namely, ulcerations, scleroderma and arthritis. They may be advised to move to a warm climate and try to avoid any undue mental strain. Glandular therapy rarely does any permanent good. However, sufferers of Raynaud's may be told that when they desire they can have their symptoms cured by an operation. The operation referred to is the sympathetic ganglionectomy and ramisection. The old Leriche operation or periarterial stripping of the blood vessels gives but temporary relief because only part of the sympathetic fibers are interrupted. The sym-

pathetic ganglionectomy is practically 100 per cent cure when the lumbar ganglia are removed for Raynaud's disease of the feet. In this operation the second, third, and fourth lumbar ganglia are removed bilaterally. Removal of the first and second dorsal and last cervical ganglia is not quite so satisfactory for the hands, but is beneficial enough for all practical purposes. Following this operation there is permanent vasodilation of the arteries of the extremities, sweating stops, skin becomes dry and soft, color changes cease and ulcers heal.

Thrombo-angiitis obliterans, or Buerger's disease, was formerly known as pre-senile gangrene, because of its appearance in young men. It has some of the symptoms and findings of Raynaud's disease and some of arterio-sclerotic occlusive vascular disease and for this reason its diagnosis at times is confusing. At one time it was thought to be a disease of Jewish males. This, however, is not entirely true. In a large group of cases somewhere in the neighborhood of 50 per cent of the patients will be Jews. The exact cause is unknown; 98-99 per cent of cases are males in the third, fourth or fifth decades. Tobacco has been described as a cause. If this be true, it should begin to occur more frequently in females. I have seen at least two cases that have never smoked. It is conceded and well established that once the disease is started it is made worse by smoking. Ergot was thought to be responsible in Russia, but this has not been confirmed in this country. There are some experiments and results that point to this disease as being due to a specific infection. Buerger was able to reproduce this disease in man by implanting a diseased vein along side of an artery. Horton has duplicated this work in animals, and Horton and Dorsey have been able to isolate a diplo-streptococcus from cultures of infected veins in definite cases of thrombo-angiitis. They, however, have not been able to consistently reproduce Buerger's disease in animals by injection of these bacteria. Powelson and Horton also found a high percentage of their Buerger cases had lead in their urine. Their control series ran a much lower per cent of positives.

The pathology of this condition is quite definite. The essential lesion is a thrombus and may involve either an artery or a vein, and frequently the veins are involved first. This is well illustrated by

some of Buerger's observations. He has reported cases of relapsing superficial phlebitis as long as ten to fifteen years before the onset of symptoms of insufficient blood supply. In the beginning there is an arteritis, probably perivascular in character, involving both the artery and its adjacent vein. The inflammation may be acute, subacute or chronic. The larger arteries are involved. Following the perivascular inflammation comes a proliferation of the intima with round cell and an occasional giant cell infiltration. The thrombus may be canalized. The relapsing character of this disease is best illustrated by the frequent attacks of superficial phlebitis. A history of these attacks is highly significant. The involved veins may occur anywhere on the body as long red streaks or nodular areas. They are superficial, painful and the thrombosed veins are palpable. Because they do occur without demonstrable signs or symptoms of vascular occlusion, they should be treated with care and the case should be watched as a potential case of thromboangiitis obliterans.

Thrombo-angiitis obliterans may occur and run a variety of courses. First, there is the compensated type with a long history. The course of this type is so benign that the patient is able to build up sufficient collateral circulation to get him by ordinary work. Secondly, there is the slowly-progressive case, with many remissions and relapses, always tending to decompensate further. Thirdly, there are the cases that develop gangrene of a toe or finger. Fourthly, there are the acute cases with rather rapid closure of a large vessel, rapid onset of claudication, trophic ulcers, night pain and gangrene. There is a fifth type which may start out as two, three, or four. The course may be fairly typical of one of these three when suddenly trauma or infection supervenes to bring on massive gangrene.

The first symptoms of thrombo-angiitis obliterans is a tired, aching feeling that is felt in the foot and leg. Many patients will give a history of trying four or five different arch supports without relief. Next is the definite claudication pain that is as diagnostic as the pain of angina due to coronary sclerosis. The pain is brought on by exercise and relieved by rest. It cannot be walked off. It may be felt in the foot or leg and is described as a severe cramp. It is probably due to anoxemia of

the muscle. It is usually felt first either in one leg or one hand and gradually, as other arteries become involved, is felt in other extremities. Next, the patient may notice that one hand or one foot gets cold more easily than formerly. If he is observing he may have found that it not only feels colder subjectively, but is actually cold to the touch. These symptoms progress. He finds he cannot walk as far as rapidly as he used to without getting the grabbing pain that stops him and makes him rest. He notices that his foot appears a dusky red. That, coupled with the pain he is having, leads him to consult a chiropodist because he believes his foot is infected. The chiropodist may incise the foot in attempt to drain it. There is no pus. The wound does not heal. Gangrene develops. Pain becomes intense, night and day. The patient lets the foot hang down. It feels better, but it also becomes swollen, and thus a vicious circle begins, because the swelling shuts off more and more of the already meager blood supply, and as it becomes decreased the gangrene spreads. This sequence of events may not necessarily take place. Instead of trauma, or an ill-advised operation, the patient may progress with increasing pain and the development of gangrene. This pain is due, as Priestly has shown, to a degeneration of the nerves, due to lack of blood supply. It is the same as an infarct. The description has been of Buerger's disease of the feet. The same may occur in the hands.

The findings on physical examination depend upon the stage at which the patient consults the doctor. Early in the disease one foot may be a little colder than the other, and one or more of the pulses in the feet or hands may be diminished or absent. The arteries to feel for are the femorals, popliteals, dorsal pedes and posterior tibials in the lower extremities. In the upper extremities it is important to feel for the axillaries brachials, radials and ulnar arteries. The extent and height of the thrombus can be roughly determined in this manner. A helpful test in determining whether or not the ulnar arteries are closed is the Allen test. The radials are rather easy to palpate, but frequently it will be doubtful as to the patency of the ulnar arteries. Allen's test consists of closing the radial artery with the examiner's fingers. The patient is then asked to open and close his hand several times. This forces all the blood out

of the hand. The arm, with the radial artery still closed, is then raised above the patient's head. If the ulnar artery is patent the hand will become pink again. If the ulnar artery is closed the hand will remain white.

Further examination will show blanching of the feet or hands upon elevation above the level of the rest of the body. Then, if the patient sits up and lets his feet or hands hang downward, rubor appears. Rubor is the term applied to the dusky red color. The degree of blanching and rubor depends upon the degree of arterial closure present. There may be trophic changes in the skin and toenails, and occasionally scleroderma of the skin. Gangrene, if present, may be either moist or dry. There is nothing about the gangrene of Buerger's disease that is of diagnostic aid.

Treatment varies with the stage in which one sees the patient. If massive wet gangrene is present, amputation is often a life-saving procedure, as well as the only possible therapy. It may at times be an emergency. Dry gangrene, even though massive, does not require the speedy operation that the wet variety does. Amputation should be high enough to insure healing. As a rule an amputation above the knee will heal, while healing of an amputation below the knee depends upon whether or not the popliteal artery can be felt. If it can be palpated, a stump just below the knee will usually heal. If it cannot be palpated, healing is a gamble. Usually, simple amputation of a toe or foot is not satisfactory. Sometimes it will heal, but more often it is but the first of a series of amputations, each one at a little higher level. No rule of thumb can be laid down that will hold for each case. In the final analysis it must depend upon the physician's clinical judgment and the patient's wishes.

Early in the disease, when claudication is the only symptom, the treatment should be conservative. The patient must be instructed in the proper manner of caring for the feet. They are his babies and must be treated as such. He must, above all else, avoid trauma, in any way, shape or manner. Too many cases of gangrene are precipitated by trauma, either accidental or surgical. Shoes must fit properly. The feet should be kept warm. Toenails cut straight across and cleaned with a blunt instrument. Corns and bunions must be

let alone. After washing the feet, great care should be exercised in drying, especially between the toes. The skin may be kept soft with lanolin. He should learn his capacity for exercise and stop just short of claudication. Again and again he must be warned that the most trivial injury may lead to gangrene. Going on the assumption that Buerger's disease is due to a specific infection, it is well to search for foci of infection, and, if found, have them removed. The prostate should not be overlooked. George Brown and his associates look upon superficial phlebitis as foci of infection and have them removed surgically. The next steps to be taken are to teach the patient a few simple procedures to follow out day after day to help build up collateral circulation. Postural exercise is one method. This consists in holding the feet or hands elevated for two minutes, down for two minutes, and straight out for two minutes. This should be done for fifteen to twenty minutes, twice, and even three times, a day. When there is no break in the skin, contrast baths may be given. Radiant heat, once or twice a day, is good, but care must be taken not to burn the skin. Some men have reported marked relief by injection of hypertonic saline and citrate solution intravenously. Smoking should be stopped. The best results I have seen have followed the use of triple typhoid vaccine given intravenously. This is given to cause fever, which in turn speeds up the circulation and causes vasodilatation and thus warms the feet. It may be of some beneficial aid, due to its non-specific protein action. Lederle's vaccine produces an excellent fever, but has the disadvantage of causing a rather severe chill. The Lilly Company has produced a product called type H typhoid vaccine, in which an attempt has been made to produce a foreign protein that, when given intravenously, will produce a fever without a chill. Their attempt has been quite successful. These vaccines may be given once a week in the early stages, starting with a dose of twenty-five million killed organisms, and increasing fifteen to twenty-five million as the patient's tolerance rises. It is safe to say that from 65-70 per cent of patients will be helped by these measures. Some men report excellent results from the use of spinal anesthesia when the feet alone are involved.

In the more advanced cases, that is, when claudication comes on with less than

a block's walk, or when night pain is severe or ulcers or gangrene are present, one's efforts must be redoubled. The patient should be in bed with almost constant heat. Typhoid vaccines should be given every two or three days, and it is here that the most striking beneficial results of fever therapy is demonstrated. If ulcers or gangrene are present they should be kept dry. A mild ointment, such as ammoniated mercury, is indicated if infection is present. From an economic standpoint, as well as a saving to a person's nervous system, it is a question of whether or not an amputation would be better than a long stay in the hospital waiting for an ulcer to heal or a gangrenous toe to drop off. These lesions can usually be healed if the patient has the time, patience, and money to wait for the treatment to work. Here, again, it is a decision that must necessarily be left for the patient to decide.

This brings me to the most recent form of treatment, namely, sympathetic ganglionectomy and ramisection. In properly selected cases this form of therapy seems at present to hold forth the greatest hope of permanent aid to the patient. The decision of whether or not a case is a candidate for this surgical procedure, requires the closest cooperation between the internist and neural surgeon. The removal of the proper sympathetic ganglia increases the blood supply of the extremities, due to the removal of the vasoconstrictor fibers; this produces a permanent vasodilatation. The increase in blood supply is in direct proportion to the vasodilatation. In many cases of Buerger's disease there is a large element of vasospasm associated with actual arterial occlusion. It is the removal of this vasospasm that this operation effects. The results of the operation depend upon the amount of vasospasm associated with the actual pathology. If there is a high degree, much good is done by operating; if there is little vasospasm present, little good is done by operation. In a new field like this it is necessary to be cautious and conservative, choosing only those cases in which vasoconstriction is definitely present. As more is learned, it possibly will be found quite proper to operate many more than are now operated.

Brown and his associates have devised a method whereby they feel reasonably sure they can separate the cases surgery will help materially from those that would

be helped little, if at all. They determine what they call the "Vasomotor Index" of the patient. The patient to be tested is placed in a room of 24 to 25 degrees C. A vaccine is given intravenously and then both mouth and skin temperatures are taken at short intervals until the fever begins to subside. If there is an increase of 4 degrees C or more in the skin temperature of the most affected digit, or if the maximal surface temperatures of said digit reaches at least 29 degrees C, the patient is then considered suitable for operation. The skin temperatures, following operation, will closely coincide with those obtained by fever. Instead of a temporary elevation in skin temperatures, as is obtained by fever, the elevation is permanent. The total amount of heat in an extremity can be measured by a calorimeter and will be found increased following ganglionectomy. The same surgical technique is used in these cases as that used in operating on cases of Raynaud's disease. The results from operation are most encouraging. Brown and Adson report a case in which the increase in heat had been maintained for seven years. In their group of 104 operative cases they report 87 per cent improved and list the average degree of improvement as 80 per cent. As time goes on, more and more cases undoubtedly will be operated. Even now, it is felt advisable to operate some cases of Buerger's who have had one leg amputated in order to preserve the other. Later, even the early cases may be urged to have the operation in order to prevent the possibility of gangrene. The mortality is low and will be lower as surgical skill is perfected. Anyone who has seen one of these poor devils suffer the tortures of the damned with gangrene, will agree that here is a fine field for preventative medicine.

The last disease I wish to discuss is that disease in which there is arterial occlusion due to arteriosclerosis with thrombosis. This condition is about as common as Buerger's disease, but instead of being a disease of young adult life, it is a disease that usually comes on after the sixth decade. The pathology of arteriosclerosis with the formation of thrombi plugging the lumens of the arteries, needs no description. The etiology is unknown.

The symptoms are like those of Buerger's disease, starting with claudication and frequently ending in gangrene. The process is rarely as rapid or as vicious in its course as Buerger's disease. It very

rarely causes gangrene in the fingers. I have never seen a case of gangrene of the fingers due to arteriosclerosis.

In examining a patient with this condition, one is apt to find the same physical findings as one does in thrombo-angiitis obliterans. One will find diminution, due to absence of pulsation in one or more of the arteries of the legs. Generally, one side is worse than the other. One will be able to observe blanching on elevation and rubor with dependency. One possibly will find trophic changes in the extremity, or even ulcers or gangrene. The arteries in the hands and arms generally will be found pulsating normally, even though the sclerosis is palpable. One may be able to demonstrate calcification of the arteries by an x-ray picture. This is confirmatory evidency only, and is not always present, or needed, to make a diagnosis. Rest pain is at times about as severe as that caused by Buerger's disease and due to the same reason. No evidence of arterial spasm is found in these cases.

The treatment of patients suffering from arterio sclerotic occlusive vascular disease is somewhat similar to the treatment of Buerger's disease. However, it differs radically in a few respects worth noting. The patients are older and cannot stand the vigorous treatment that younger ones are able to tolerate. There is no arterial spasm to be relieved. The same principle applies here as in Buerger's disease: to increase circulation and to protect the foot in every conceivable way from injury while nature is doing its best to build up a collateral circulation. Even the doctor's treatment and nature's best efforts sometimes are inadequate. However, they do save limbs often enough to be worth trying. Protection of the foot requires no further consideration. The same measures are as applicable here as in thrombo-angiitis obliterans. Increasing circulation is helped by postural exercises, contrast baths and radiant heat. Fever-producing substances are not used, because of the danger of further thrombosis during the chill stage. This same danger is present in treating elderly Buerger patients. There is no arterial spasm in this condition, so obviously ganglionectomy is not indicated.

No description of arterio-sclerotic vascular disease would be complete without some mention of so-called diabetic gangrene. This can be disposed of in a few words. In the first place, the diagnosis

should be made before gangrene takes place. In the second place, the condition is no different than that just described. It is simply arteriosclerotic occlusive vascular disease with thrombosis and complicated diabetes. As you know, uncontrolled diabetes makes any skin more susceptible to infection. Infection, plus a decreased blood supply, means moist gangrene. The treatment is to control the diabetes and to carry out the same procedure as just outlined.

Before concluding, let me briefly summarize and restate the principal diagnostic differences of these three diseases which are so similar and yet so different:

Raynaud's

1. (a) Arteries not occluded.
2. (b) Gangrene rare and then dry and only of finger tips.
3. Arterial spasm c three phase color reaction present.
4. (c) Bilateral.
5. (d) No claudication.
6. (e) Rest pain rare.
7. (f) No history of superficial phlebitis.
8. (g) No blanching or rubor.
9. (h) Ninety per cent in females.
10. Disease of young adult life.
11. Negative X-ray.

Thrombo-Angiitis Obliterans

1. Arteries occluded.
2. (I) Gangrene common of hands and feet.
3. (II) Frequent evidence of arterial spasm.
4. Not always.
5. Claudication.
6. (III) Rest pain when present severe.
7. (IV) Frequent history of superficial phlebitis.
8. Blanching and rubor present.
9. 95-98 per cent in males.
10. (VI) Disease of young adult life.
11. (VII) Negative X-ray.

Arterio-Sclerosis With Thrombosis

1. Arteries occluded.
2. Gangrene of feet common; gangrene of hands uncommon.
3. No evidence of arterial spasm.
4. Not always.
5. Claudication.
6. Rest pain severe but not as severe as in Buerger's disease.
7. No history of superficial phlebitis.
8. Blanching and rubor present.
9. About equal.
10. Past sixth decade.
11. X-ray at times will show calcified arteries.

It will be noticed that the main difficulties in diagnosis are between Raynaud's and Buerger's, and Buerger's and arterio-sclerosis. Raynaud's and arteriosclerosis have very little in common and should not be hard to separate. The main difference between the first two conditions are noted by the letters, while the main difference between the last two are noted by Roman numerals. If these few points are kept in mind, one will have very little trouble in making a diagnosis. Of course, there will be borderline cases in which the decision will be difficult, just as in so many diseases of other organs, but here are three conditions that can be diagnosed early and accurately in a high percentage of cases

with only the history to go by and with the use of only the fingers and eyes. No laboratory instruments are necessary. If one were to diagnose only one of these cases early enough to save one of these poor devils from having a red, cold toe incised, he would be more than amply repaid for his choice of medicine as a career. These patients can be treated; they are not hopeless. Early diagnosis and treatment is just as important as in cancer. The advantage of early diagnosis lies with the vascular diseases because one can see and feel the diseased parts and know in what condition the arteries are, while too often the cancer lies in one of the hidden cavities of the body unseen, unpalpable and perhaps unsuspected.

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 KERATODERMA BLENNORRHAGICUM

John Godwin Downing, Boston (*Journal A. M. A.*, March 17, 1934), reports a case of keratoderma blennorrhagicum in which vesiculectomy and prostatotomy gave a favorable result in contrast with other forms of therapy. This case was shown at a meeting in April, 1930, at which time the patient was so emaciated and weak that it was necessary to carry him on a stretcher. He was again shown in November, 1930, at which time the patient had gained about thirty pounds (13.6 Kg.), showed no lesions, and was practically free from joint symptoms, although he still used a cane. After the operation vaccine therapy was continued, and it seemed to be more beneficial than it had been previously. It is possible that the mild eruption that he had on his first entrance to the hospital may have been a beginning keratoderma blennorrhagicum. It is likely that many eruptions associated with arthritis are frequently misdiagnosed on account of the rarity of the disease and the low index of suspicion.

A BETTER METHOD OF TREATING FRACTURES OF THE JAWS

Frederick B. Moorehead, Chicago (*Journal A. M. A.*, May 19, 1934), employs elastic traction in practically all cases in which reduction is required. The mechanism employed in reduction frequently serves equally well for satisfactory immobilization. Under traction the parts are brought into proper relation and held with slight movement, which materially aids in repair. In the common type of jaw fracture the short fragment is pulled up by the masseter internal pterygoid and temporal muscles, while the long fragment is pulled down by the mylohyoid, digastric geniohyoid and external pterygoid. A flat or round wire is molded with a pair of pliers to fit the arch and is fastened to the neck of the teeth with wire or silk ligatures. Orthodontia rubber bands are attached to the wire on each jaw with silk ligatures. After two or three weeks the rubber bands may be removed to see whether occlusion is retained, without help, and if so the appliance may be discarded and a retaining appliance may be used if necessary. Total fractures of the upper jaw with downward and backward, downward and forward, or downward and lateral displacement are reduced best by a skull cap and chin support made with starch bandage, hooks and rubber bands. In a few days the upper jaw will be pushed up to a normal position. Forward, backward or lateral displacement is usually corrected as the jaw is pushed up. If, however, these displacements are not corrected, additional correction may be used by placing the patient's artificial dentures in the mouth and applying traction. In unilateral fractures of the upper jaw, with downward displacement an appliance is placed on the opposite side from the fracture and traction on the sound side will push the fractured jaw upward until full occlusion is reached. For holding lateral stumps of the lower jaw, following resection of the anterior portion, rubber bands hold the jaw in occlusion with the upper jaw without fixing it. This simple appliance holds the stump or stumps in line during the process of healing and simplifies the introduction of a bone graft later.

 DIET TABLE IN A PRIVATE BOARDING SCHOOL OF TWO HUNDRED BOYS

Thomas N. Horan, Bloomfield Hills, Mich. (*Journal A. M. A.*, March 17, 1934), points out that a diet that is well balanced, prepared and served under excellent conditions and properly controlled has been carried out for several years at Cranbrook School. The actual dieting is preceded by a period of relative fasting, followed by a rapid increase in food to as high as 5,000 calories. Various devices and logic are employed to persuade the boys to eat. The selection of individuals who will show clinical improvement on a gaining diet requires, first, attention to the causes of underweight and, secondly, recognition of the wide range in normal weights and understanding of the various types of body build. Persons placed on a gaining diet who are definitely below their normal weight will show a prompt and favorable response.

THE JOURNAL

OF THE

Oklahoma State Medical Association

Issued Monthly at McAlester, Oklahoma, under
direction of the Council

VOL. XXVII

JULY, 1934.

No. 7

DR. L. S. WILLOUR.....Editor-in-Chief
McAlester, Oklahoma.

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Medical Arts Building, Tulsa, Okla.

Entered at the Post Office at Muskogee, Oklahoma,
as second-class mail matter July 28, 1912.

This is the official Journal of the Oklahoma State Medical Association. All communications should be addressed to The Journal of the Oklahoma State Medical Association, 203 Ainsworth Building, McAlester, Oklahoma. \$4.00 per year; 40c per copy.

The editorial department is not responsible for the opinions expressed in the original articles of contributors.

Reprints of original articles will be supplied at actual cost provided requests for them is attached to manuscripts or made in sufficient time before publication.

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EDITORIAL

ATTENTION, PLEASE!

I wish to call attention, editorially, to the first article appearing in the Journal, on the subject of rabies.

This being a preventable disease, as demonstrated in England, it seems evident that there is a great responsibility placed upon the medical profession. Much can be accomplished in vaccination of animals that are susceptible to this disease. Probably of next importance is the muzzling of dogs not immunized. The essayist, by way of treatment, emphasizes cauterization of the wound with fuming nitric acid, and the institution of anti-rabic treatment. Some judgment should be used

in the administration of this treatment as wounds in certain localities demand more intensive and extensive treatment than other parts of the body.

Of course our people think much of their domestic pets and their affection for them can be well demonstrated by their immunization against rabies and the protection of the people of the community by either this method or proper muzzling.

There is a sign at the entrance of one of the main highways that leads to one of our small cities which reads: "We Love Our Children, Drive Carefully." There might well be a sign placed at the entrance to all cities reading: "We Love Our Children, Immunize or Muzzle All Domestic Animals."

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Editorial Notes--Personal and General

DR. W. J. TRAINOR, Tulsa, has been elected chairman of the City Board of Health.

DR. and MRS. F. GREEN EVANS, formerly of Afton, have moved to Durant, where Dr. Evans will continue his practice.

DR. and MRS. CURT von WEDEL and children, Oklahoma City, spent the first part of June at their cabin home near Estes Park, Colorado.

DR. G. N. BILBY, Oklahoma City, attended the Annual Conference of State and Provincial Health Authorities of North America which was held in Washington in June.

DR. and MRS. SAMUEL R. CUNNINGHAM, Oklahoma City, have returned from Chicago and Rochester where Dr. Cunningham attended the meeting of the American Orthopedic Association in Rochester.

DR. and MRS. EARL D. MCBRIDE and daughter, Mary Frances, Oklahoma City, have returned from Milwaukee and Rochester, Dr. McBride attending the meeting of the American Orthopedic Association in the latter city.

DR. and MRS. L. S. WILLOUR and daughter Margaret, McAlester, visited in Cleveland in June, where Dr. Willour attended the meeting of the American Association for the Study of Goiter, and the meeting of the American Medical Association.

DR. K. G. PARKS, formerly of Oklahoma City, who for the past two years has been in New York specializing in eye, ear, nose and throat work, is reported seriously ill and has undergone an operation at the Thayer Clinic, Johns Hopkins Hospital, Baltimore, Md.

DR. JOHN O. McREYNOLDS, Dallas, Texas, retiring president of the Pan-American Medical Association, has been awarded the Venezulean medal of honor by President Juan Vicente Gomez of that Republic, in recognition of his distinguished services to the cause of education.

DR. CHARLES R. RAYBURN, Norman, has returned from New York where he delivered a paper at the meeting of the American Psychiatric Association.

DR. D. W. GRIFFIN and D. G. WILLARD, both of Norman, also attended this meeting.

DR. and MRS. R. M. HOWARD, Oklahoma City, visited in Cleveland in June, where Dr. Howard delivered a paper before the American Association for the Study of Goiter. Dr. Howard is the President of this association and we have been promised his address for publication in our Journal at an early date.

The following Oklahoma physicians registered at the meeting of the American Medical Association, held in Cleveland the week of June 12 to 15, 1934: Doctors Robert H. Akin, Oklahoma City; V. K. Allen, Tulsa; Clarence E. Bates, Oklahoma City; Ralph Bowen, Oklahoma City; C. E. Bradley, Tulsa; D. W. Branham, Oklahoma City; Claude Chambers, Seminole; Anson L. Clark, Oklahoma City; Cyril E. Clymer, Oklahoma City; W. Albert Cook, Tulsa; E. S. Ferguson, Oklahoma City; R. B. Ford, Holdenville; George H. Garrison, Oklahoma City; E. Goldfain, Oklahoma City; Walter Hardy, Ardmore; Charles T. Harris, Kiowa; John E. Heatley, Oklahoma City; R. M. Howard, Oklahoma City; W. F. Keller, Oklahoma City; Everett S. Lain, Oklahoma City; Wann Langston, Oklahoma City; LeRoy Long, Oklahoma City; L. J. Moorman, Oklahoma City; R. L. Murdoch, Oklahoma City; Ralph E. Myers, Oklahoma City; I. A. Nelson, Tulsa; George R. Osborn, Tulsa; Horace Reed, Oklahoma City; Lea A. Riely, Oklahoma City; McLain Rogers, Clinton; Marion Roland, Oklahoma City; Homer A. Ruprecht, Tulsa; Ned R. Smith, Tulsa; G. F. Stanbro, Oklahoma City; Henry H. Turner, Oklahoma City; M. M. Wickham, Norman; L. S. Willour, McAlester.

News of the County Medical Societies

OKMULGEE County Medical Society held a golf tournament June 28th at the Okmulgee Country Club. Dinner followed the tournament.

McINTOSH County Medical Society met June 7th at Checotah. Dr. C. E. White, Muskogee, presented a paper on "Care of the Breast". There was a round table discussion of "Infantile Diarrhoea". Dr. Brown Oldham, Muskogee, was on the program.

CADDO County Medical Society met June 12th at the Anadarko Hospital in special session to hear lectures from Doctors Bert F. Keltz and Harry Wilkins, Oklahoma City. Dr. Keltz talked on diabetes, while Dr. Wilkins discussed the diagnosis and diagnostic methods of brain tumors.

SOUTHERN Oklahoma Medical Association held their twenty-third quarterly session at Chickasha, June 5th. The following scientific program was presented:

Registration—Noon to 1:00 P. M. at Harry's Cafe.

1:15 P. M.—Address of Welcome by Dr. C. P. Mitchell, President of Grady County Medical Society.

1:45 P. M.—"Uses of Vaccines and Sera in Children," by Dr. Ben H. Nicholson of Oklahoma City.

Discussion opened by Dr. J. L. Holland, Madill, Oklahoma.

2:15 P. M.—"Minor Surgical and Office Gynecology," by Dr. A. C. Hirschfield, Oklahoma City. Discussion opened by Dr. Alfred Sugg, Ada, Oklahoma.

2:45 P. M.—"Degenerative Heart Disease of Middle Life," by Dr. W. F. Dean, Ada, Oklahoma. Discussion opened by Dr. Anderson, Shawnee, Oklahoma.

3:15 P. M.—"Some Aspects of Dermatology," with lantern slides, by Dr. C. P. Bondurant, Oklahoma City. Discussion opened by Dr. M. M. Wickham, Norman, Oklahoma.

4:00 P. M.—"Phases of the Recent Measle Epidemic," by Dr. E. M. Gullatt, Ada, Oklahoma. Discussion opened by Dr. Dick Ford, Holdenville, Oklahoma.

4:30 P. M.—"Mental Conditions Associated With Thyroid Dysfunction," by Dr. Chas. A. Brake, Norman, Oklahoma. Discussion opened by Dr. G. S. Barger, Purcell, Oklahoma.

6:00 P. M.—Dinner in Ballroom of Harry's Cafe.

Toastmaster—Dr. Roy E. Emanuel, Chickasha, Oklahoma.

Introduction of guests.

"The Drive of Civilization," by Dr. C. P. Bondurant, Oklahoma City.

Round Table Discussion—"Advantages and Disadvantages of Clinics." Discussion opened by Dr. G. E. Johnson, Ardmore, Oklahoma; Dr. J. E. Hughes, Shawnee, Oklahoma; Dr. Oscar Miller, Ada, Oklahoma; Dr. J. L. Holland, Madill, Oklahoma.

SOUTHEASTERN Oklahoma Medical Association met June 26th in the auditorium of the Eastern Oklahoma Tuberculosis Sanatorium, Talihina, beginning at 11:00 o'clock A. M., presenting the following program:

Symposium on Tuberculosis:

Heliotherapy and Pulmonary Tuberculosis—Dr. W. D. Roseborough, State Tuberculosis Sanatorium, Talihina, Okla.

Pulmonary Tuberculosis, Diagnostic Symptoms and Tests—Dr. W. E. Van Cleave, Superintendent Choctaw-Chickasaw Sanatorium, Talihina, Okla.

Tuberculosis of the Throat, Diagnosis and Treatment—Dr. L. C. Kuyrkendall, McAlester, Okla.

X-Ray Findings in Lung Diseases—Dr. F. P. Baker, Superintendent State Tuberculosis Sanatorium, Talihina, Okla.

General Discussion opened by Dr. Paul V. Annadown, Sulphur, Okla.

Luncheon 1:00 P. M. at Sanatorium.

Program resumed at 1:45 P. M.

Invocation—Rev. J. H. Bellot, Pastor First Presbyterian Church, Talihina, Okla.

Welcome Address—Dr. R. L. Wright, Poteau, Okla.

Response to Welcome Address—Dr. Jas. L. Shuler, Durant, Okla.

Surgery of the Gall Bladder—Dr. R. B. Ford, Holdenville, Okla.

High Lights In Surgery—Dr. J. F. Park, McAlester, Okla.

Important Factors in Empyema—Dr. C. C. Gardner, Atoka, Okla.

MUSKOGEE Academy of Medicine held its mid-summer meeting at the Town and Country Club,

Muskogee, July 12th. The following program was presented:

Clinics: Oklahoma Baptist Hospital, 10:00 A. M.
Operating Room A: Dr. C. E. Burford, Saint Louis, Mo.—"Urology".

Operating Room B: Dr. E. H. Carey, Dallas, Texas—"Ophthalmology".

Operating Room C: Dr. A. E. Hertzler, Halstead, Kansas—"Thyroid, General Surgery".

Muskogee Town and Country Club afternoon program:

Guest Speakers—1:30 P. M.

Dr. E. H. Carey, Dallas, Texas—"Glaucoma". Sponsor, Dr. F. S. King, Muskogee, Okla.

Dr. C. E. Burford, Saint Louis, Mo.—"Bladder Neck Obstruction". Sponsor, Dr. Floyd E. Warterfield, Muskogee.

Dr. A. E. Hertzler, Halstead, Kansas—"Office Treatment of Goiter". Sponsor, Dr. L. S. McAlister, Muskogee, Okla.

Dinner at Muskogee Town and Country Club at 6:00 P. M.

Muskogee Town and Country Club, evening program:

Guest Speakers—8:00 P. M.

Dr. C. E. Burford, Saint Louis, Mo. Subject unannounced. Sponsor, Dr. S. D. Neely, Muskogee.

Dr. A. E. Hertzler, Halstead, Kansas—"Office Treatment of Stomach Trouble". Sponsor, Dr. R. N. Holcombe, Muskogee.

Dr. E. H. Carey, Dallas, Texas—"Ocular Manifestations of Nasal Origin". Sponsor, Dr. M. K. Thompson, Muskogee.

WOODWARD County Medical Society met at Supply Hospital June 12th and presented the following program:

Forenoon—Assemble.

Lunch at Hospital 12:00 to 1:00.

Following lunch, a paper by Dr. J. Mark Duncan, of Shattuck—"Focal Infections of Dental Origin".

Paper by Dr. P. L. Hays of Vinita State Hospital—"Sequelae of Encephalitic Lethargica".

THE AMERICAN COLLEGE OF PHYSICIANS WILL MEET IN PHILADELPHIA, 1935.

The American College of Physicians will hold its Nineteenth Annual Clinical Session in Philadelphia, April 29 to May 3, 1935.

Announcement of these dates is made particularly with a view not only of apprising physicians generally of the meeting, but also to prevent conflicting dates with other societies that are now arranging their 1935 meetings.

Dr. Jonathan C. Meakins, of Montreal, Que., is President of the American College of Physicians, and will arrange the program of general sessions. Dr. Alfred Stengel, Vice-President in charge of medical affairs of the University of Pennsylvania, has been appointed general chairman of local arrangements and will be in charge of the program on clinics. Mr. E. R. Loveland, executive secretary, 133-135 S. 36th Street, Philadelphia, Pa., is in charge of general and business arrangements, and may be addressed concerning any feature of the forthcoming session.

WOMEN'S AUXILIARY

The Sixth Annual Convention of the Women's Auxiliary to the Oklahoma State Medical Association was held in Tulsa, May 21, 23, 1934, Mayo Hotel.

The Executive Board met at 10:00 A. M., Monday, May 21, with fourteen members present. Among resolutions passed for recommendation to the general meeting was one to increase the Medical Student Loan Fund, by adding to it fifty per cent of the treasury balance, after all bills are paid, and by urging all county auxiliaries to give to the fund. At present the fund is to remain in a savings account at the bank.

The following committees were appointed: Resolutions, Nominating and Finance.

The Executive Board adjourned for a luncheon at the University Club.

At 2:00 P. M. visitors enjoyed a motor ride over the city, arranged by Mrs. T. B. Coulter and committee.

An informal dinner and fashion revue in the Junior League Tea Room, Monday evening, was arranged for the auxiliary members and out-of-state guests.

A general meeting was held at 10:30 A. M., Tuesday, May 22, in the French Room of the Mayo Hotel. The session was well attended with representatives from twelve counties, although only six counties have organized auxiliaries, as follows: Canadian, Cleveland, Oklahoma, Pottawatomie, Tulsa and Woodward. This is an increase of two over last year, the total membership of the State Auxiliary being one hundred ninety-two.

Committee and county auxiliary reports were presented as follows:

Canadian County (the newest organization with headquarters at El Reno) reports ten members, with special work for the Red Cross.

Cleveland County, with twenty-two members, have for their objective better understanding of the present day practice of medicine presented by scientific papers at regular monthly meetings. Their projects included clerical work with Cleveland County Clinic, in which all took part and active participation in health programs and a health poster contest for grade schools. The posters were displayed in a downtown building and prizes awarded for the best. Their social affairs in-

cluded monthly luncheons and two parties for their husbands.

Oklahoma County, with a membership of seventy-seven active and nine honorary members, had an average attendance of fifty. At their regular meetings one hundred thirty-two garments and six scrap books were made for the Crippled Children's Hospital. Members assisted in organizing Canadian County in February, 1934. Two meetings were devoted to public health, one addressed by the city health director on the "Functions of the City Health Department," the other an address on "Animal Experimentation," by a physician. The Pure Food Bill, before Congress, was presented and discussed in conjunction with A. A. U. W. posters, and slides from the U. S. Department of Agriculture, pertaining to this bill, were shown.

Pottawatomie County, Shawnee headquarters, where the new State President, Mrs. T. D. Rowland, resides, reports a special project of Red Cross work and regular monthly meetings. They have a membership of twenty.

Tulsa County, with a membership of forty-eight, reports special emphasis on educational programs for the year. Two open meetings on public health were addressed by the State Health Superintendent, Dr. G. N. Bilby, and the President of the Tulsa County Medical Society, Dr. Ned R. Smith. Parent-teacher associations, womens' clubs, and the general public were invited to attend. Philanthropic work included sewing for the Public Health Association and Salvation Army Maternity Home. Christmas gifts for children in charity wards at St. John's and Morningside Hospitals, were included. Regular monthly luncheon meetings were held in the homes of members.

Woodward County, with headquarters at Mooreland, Mrs. T. B. Triplett, President, reports five counties in this group, all in the northwestern part of the state. Organized in April, 1934, with charter membership of twenty. They meet every two months, the same night and in the same town as the Medical Society meets. Some of the members drive eighty miles to attend. They especially enjoy the social contacts.

All auxiliaries reported especial emphasis on educational programs.

Mrs. John C. Perry, State Hygiene

Chairman, reports twenty-six subscriptions sent in by various auxiliaries, most of them given to institutions for children in this state.

The resignation of Mrs. J. E. Hughes, President-elect, was presented and accepted with regret. Mrs. H. D. Murdock, Tulsa, read the report of the nominating committee, and the following officers were elected for the coming year: President, Mrs. T. B. Rowland, Shawnee; President-elect, Mrs. C. M. Pounders, Oklahoma City; Vice-President, Mrs. Charles R. Rayburn, Norman; Recording Secretary, Mrs. C. H. Paramore, Shawnee; Treasurer, Mrs. F. Clinton Gallaher, Shawnee.

Mrs. A. W. Roth, 1933-34 President, yielded her office to the newly-elected President, Mrs. T. D. Rowland, with a few words of encouragement, and the Sixth Annual Convention closed, to meet at the Oakhurst Country Club for a luncheon and entertainment, which was arranged by Mrs. Fred Y. Cronk and her committee.

Mrs. A. Ray Wiley, Tulsa, was Convention Chairman, in charge of all arrangements and programs for the social affairs of the convention.

TRANSACTIONS OF THE FORTY-SECOND ANNUAL SESSION OKLAHOMA STATE MEDICAL ASSOCIATION, TULSA, MAY 21, 22, 23, 1934.

THE COUNCIL
May 21, 1934, 2:30 P.M.

Meeting called to order by Dr. T. H. McCarley, President.

Present: Doctors T. H. McCarley, President, McAlester; LeRoy Long, President-Elect, Oklahoma City; L. S. Willour, Secretary-Treasurer-Editor, McAlester; W. A. Howard, Chelsea; F. M. Adams, Vinita; S. A. McKeel, Ada; O. E. Templin, Alva; A. B. Chase, Oklahoma City; J. S. Fulton, Atoka; Paul B. Champ-
lin, Enid; D. Long, Duncan; and W. A. Tolleson, Eufaula.

Reading of the minutes of previous meeting, by the Secretary, approved as read.

The President appointed a committee, composed of Doctors A. B. Chase and F. M. Adams, to audit the Secretary's report. This committee reported, after investigation, that they found the records and accounts of the Secretary-Treasurer-Editor correct as reported in the audit.

Motion by Dr. Howard, and seconded by Dr. McKeel, that the audit report be adopted. Carried unanimously.

Motion by Dr. LeRoy Long, seconded by Dr. Temp-

lin, that the Secretary-Treasurer-Editor be authorized to make any change in the mechanical form of the Journal that would seem to be of any service to the Association. Motion carried.

It was authorized by the Council that the Secretary-Treasurer-Editor make such changes in the abstract department as might seem feasible, adding the department on Internal Medicine and Pediatrics.

Acting on the request of the Hughes County Medical Society, this county was taken from District No. 9 and placed in District No. 7.

Motion by Dr. Fulton, seconded by Dr. Willour, that Dr. Henry H. Turner, Chairman, and the other members of the committee on Post Graduate Medical Teaching be commended for their excellent work in the carrying out of this program. Motion carried unanimously.

The matter of the appeal of Dr. C. W. Richards, Newkirk, was next presented to the Council, the Chair appointing a committee, composed of Doctors Templin, McKeel and D. Long, to investigate and report at a future meeting of the Council.

On motion of Dr. Fulton, seconded by Dr. Chase, the Council adjourned until May 22, 1934, 1:30 P.M.

THE COUNCIL

May 22, 1934, 1:30 P.M.

Meeting called to order by Dr. T. H. McCarley, President.

All members of the Council present.

The committee appointed to investigate and report on the case of Dr. C. W. Richards, reported that it was the findings of this committee that the actions of the Kay County Medical Society were justifiable in refusing membership to Dr. Richards. On motion of Dr. Fulton, seconded by Dr. Howard, this report was unanimously adopted.

Motion by Dr. Willour, seconded by Dr. Fulton, to the effect that it is the sense of the Council that all assistance possible be given the Board of State Medical Examiners regarding the revocation of license of those engaged in the illicit traffic of narcotics. Motion carried.

Motion by Dr. Howard, seconded by Dr. D. Long, that the Post Graduate Medical Teaching be carried on and that \$700.00 be appropriated for this work. Motion carried.

In accordance with a recommendation made by the House of Delegates an appropriation of \$250.00 was made to carry on the work of the Committee on Study and Control of Cancer into the counties that are unable to pay, admonishing this committee that this money is only to be used where financial condition of the county in which the work is to be carried on is such that they are unable to meet the expense.

The Secretary-Treasurer-Editor was authorized to meet the expense of a committee of the Council that will meet in conjunction with a like committee from the Bar Association to investigate the medical-legal aspect of malpractice procedures.

The Secretary-Treasurer-Editor was authorized to expend not more than \$25.00 to encourage scientific exhibits. This money to be placed at the disposition of a permanent committee on Scientific Exhibits to be appointed by the President.

On motion of Dr. Fulton, seconded by Dr. Howard, an appropriation of \$300.00 was made to meet the expense incidental to a campaign for the passage of a basic science law. Motion carried.

On motion of Dr. Templin, seconded by Dr. Howard, the Council adjourned.

L. S. WILLOUR,
Secretary.

HOUSE OF DELEGATES

May 21, 1934, 7:30 P.M.

Meeting called to order by the President, Dr. T. H. McCarley.

It was moved by Dr. E. A. Aisenstadt, Picher, that the minutes of the last regular meeting be accepted as published in the Journal. Motion seconded and carried.

The President then called for the report of all standing committees.

Report of the Committee on Conservation of Hearing, read by the Secretary, and on motion was duly adopted.

Report of the Committee on Crippled Children was read and on motion was adopted and the suggestions submitted to the Legislative Committee for action. Motion adopted.

The President at this time appointed a Resolutions Committee composed of Doctors A. B. Chase, Chairman; Walter Larrabee, and W. L. Taylor.

The report of the Council was then submitted to the House of Delegates by the President:

"In the interim since the last annual meeting the Council of the State Medical Association has held two called meetings, one October 7, 1933, the other October 31, 1933, and a regular meeting on May 21, 1934.

"The first called meeting was occasioned by the death of our Secretary-Treasurer-Editor, Dr. C. A. Thompson. At this time the Council had the books of Dr. Thompson audited by a certified accountant, and this audit was accepted by the Council on the recommendation of a committee of the Council appointed to examine this audit. At that time there was an indebtedness of about \$2000.00, and \$1536.00 in bills receivable. At this meeting Dr. L. S. Willour, of McAlester, was elected Secretary-Treasurer-Editor to fill the unexpired term of Dr. C. A. Thompson, deceased. Dr. W. A. Tolleson, Eufaula, was elected Councilor of District No. 9 to fill the unexpired term of Dr. L. S. Willour.

"On October 31, 1933, a called meeting of the Council was held for the purpose of considering what might be done toward furnishing medical attention to the indigent sick of the state. This meeting was suggested by a representative of the governor of the state, who at that time was Federal Administrator. After a conference with this representative a schedule of fees was set up, averaging about fifty per cent of the usual fee for medical and surgical services, and what was thought to be a workable plan was suggested. This representative of the Federal Administrator thought that she would soon get approval of this setup and that it would soon be put in operation, but repeated inquiries made

following this meeting disclosed that no action was ever taken.

"At the meeting May 21, 1934, the audit of the Secretary-Treasurer-Editor's books was examined by a committee of the Council and on their recommendation was approved. This report shows that the \$2000.00 indebtedness before mentioned has been liquidated, that bills receivable have been reduced from \$1536.00 to \$705.50. All indebtedness of the State Medical Association has been met when due, and the assets of the State Association this date are practically the same as they were a year ago. There was cash on hand October 2, 1933, in the General Fund, \$1168.28; in the Medical Defense Fund, \$42.67. The total assets at this time are \$13,343.93, distributed as follows: General Fund, \$1,801.82; Medical Defense Fund, \$1542.11; U. S. Bonds, General Fund \$7000.00; U. S. Bonds, Medical Defense Fund, \$3000.00. The Council notes with pleasure that the Journal has been maintained in its usual size, and the quality of the scientific articles of as high a standard. The editorial policy of the Journal is approved particularly with reference to the uncompromising stand with reference to affiliation with the cults. We note that there has been a slight increase in the membership of the State Association in the past year. The Secretary-Treasurer-Editor is authorized by the Council to make any pertinent change necessary in connection with the form of the Journal, and to rearrange the material for abstracts of articles with particular reference to general medicine and pediatrics."

Respectfully submitted,

T. H. McCARLEY,
President.

Resolution opposing the exploitation of drugs, remedies, etc., over the radio, was introduced, and on motion, duly seconded, was adopted. The resolution is as follows:

"WHEREAS, The health of the citizens of the United States constitutes the greatest asset of the nation, and the responsibility of conserving the health of the citizens and restoring them to health in times of illness reposes in the medical profession; and

"WHEREAS, This responsibility is very great, as is evidenced by the high educational and professional standards which physicians are required to meet in the various states of the Union before being permitted to diagnose disease and treat the sick; and

"WHEREAS, Satisfactory and safe service of this type can only be rendered after a long and careful study of the causes and symptoms of disease, and that these causes and symptoms can only be determined after an interview with and physical examination of the patient; and

"WHEREAS, No rational or safe treatment can be decided upon and carried out under circumstances other than those above set forth without danger to the life or health of the patient; and

"WHEREAS, For many months past the radio broadcasting companies of the United States have, through their various broadcasting stations, permitted the exploitation of many drugs, preparations, patent medicines and so-called cures to the radio audiences of America; and

"WHEREAS, It has been well established that some of the drugs, preparations and patent medicines so exploited are dangerous in the hands of the layman; others are of doubtful value, and practically

all instances their value for the relief of the symptoms and conditions for which recommended have been overstated and are misleading to the public; and

"WHEREAS, The symptoms and conditions for which these drugs, preparations and patent medicines are recommended may be, and frequently are, indications of serious conditions calling for careful study on the part of a well qualified physician in order that a correct diagnosis may be made, and the proper treatment instituted before the disease reaches an advanced stage; and

"WHEREAS, Radio broadcasting is under the control of the Federal Radio Commission, and the radio is being used to broadcast non-supportable claims and the statements regarding a large number of drugs and preparations for the treatment of human ailments;

"THEREFORE BE IT RESOLVED, That the Oklahoma State Medical Association is opposed to the advertising, recommending or in any way exploiting over the radio any preparations, remedies, medicines or appliances for the treatment of human ailments; and that a copy of these resolutions be forwarded to the Federal Radio Commission with a request that in the interest of the health of the citizens of the United States they exercise their authority to discontinue such advertising over the radio;

"BE IT FURTHER RESOLVED, That physicians use such influence with their patients and with the public as may be necessary to secure their cooperation in sending protests to the Federal Radio Commission and to broadcasting stations against misleading and unwarranted medical advertising."

On motion, duly seconded, the report of this committee was accepted.

Resolution introduced by Dr. S. D. Neely, as follows:

"That the House of Delegates of the Oklahoma State Medical Association hereby specifically instruct their delegates to the American Medical Association to introduce a resolution in the House of Delegates of the American Medical Association favorable to the instituting of liability insurance to members by the American Medical Association," was discussed and later amended to read:

"That our delegates to the American Medical Association investigate as to the feasibility of the American Medical Association perfecting a plan for the handling of liability insurance."

Resolution, as amended, carried.

The following resolution, relative to the establishing of a health department, was introduced, and on motion, duly seconded, was carried:

"As an organization we are interested in the health and welfare of Oklahoma people. In order that the state may render the best health service to its citizenship the Department of Health should be established for stability and continuity of purpose so that planning of efficient programs may be made with some assurance of carrying them out. The Department should be the leader and coordinator of all phases of health work within the state. This may best be accomplished through cooperation with organized medicine and the selection of personnel on the basis of fitness and training for such service.

"Therefore, the Oklahoma State Medical Association favors the passage of legislation as recommended by the United States Public Health Service in

their bulletin published March 13, 1931, 'A Public Health Survey of Oklahoma'. This survey recommends a Board of Health, as follows:

"Three members of the Oklahoma State Medical Association, designated by the Association.

"Dean of the Oklahoma University School of Medicine.

"Member nominated by the State Dental Society.

"State Superintendent of Public Instruction.

"Director Extension Division, University of Oklahoma.

"President of one of the State Teachers' Colleges.

"Executive Officer Oklahoma Tuberculosis and Health Association.

"We ask that candidates for governor and the legislature pledge themselves to this reform, recommended not only by the U. S. Public Health Service, but by state and national health organizations and endowed foundations."

The following resolution was introduced:

"That the House of Delegates of the Oklahoma State Medical Association approve the adoption by any component county medical society of a minimum fee schedule for industrial and contract practice.

"It is to be understood that this minimum fee means that no less than this fee be charged, but a larger fee may be charged, if circumstances warrant in a particular case."

On motion, duly seconded, the following substitute motion carried:

1. "That charges for service in industrial work be governed by local custom just as in the case of any other kind of professional service.

2. "That it shall be considered unethical for a member of this association to fix charges for service upon any other basis."

The following resolution was introduced, and on motion, duly seconded, was unanimously adopted:

"WHEREAS, Malpractice suits in the State of Oklahoma have greatly increased in late years, causing much worry, loss of reputation, and loss of money to the individual, as well as bringing the profession into ill-repute; and

"WHEREAS, A malpractice suit must usually have medical testimony in order to have much weight in court;

"BE IT THEREFORE RESOLVED, That the President of this Association appoint a committee and appropriate sufficient funds to study and investigate this condition and to meet with a similar committee of the State Bar Association and formulate some plan of action which will tend to remedy this condition."

The following resolution was introduced, and on motion, duly seconded, unanimously carried:

"WHEREAS, The Secretary of the Interior, through the Commissioner of Indian Affairs, has made a ruling that Indians, who are wards of the Government, are to be charged according to a fee list submitted by him;

"WHEREAS, This list does not consider the finan-

cial status of the individual but puts them on a basis similar to the Veterans' Bureau;

"BE IT RESOLVED BY THE OKLAHOMA STATE MEDICAL ASSOCIATION, Tulsa, May 22, 1934, That the Commissioner of Indian Affairs consider the compensation for medical and surgical services rendered on a basis of the individual's financial ability and a just fee be allowed;

"BE IT FURTHER RESOLVED, That a copy of this resolution be sent to the Commissioner of Indian Affairs;

"ALSO, That a copy be sent to the Oklahoma Congressional delegation and that their aid be solicited in securing recognition of the same by the proper authorities."

The following resolution was introduced, and on motion, duly seconded, was unanimously adopted:

"WHEREAS, Definite policies are now in operation and in the process of development in various parts of the country, with the object of attaining the cooperation of hospitals, clinics, medical colleges and like institutions, in observing the economic and ethical principles enunciated by component local societies in affiliation with the Oklahoma State Medical Association; and

"WHEREAS, As a result of the promulgation of these policies by component units of the Oklahoma State Medical Association, definite 'approved lists' of hospitals, clinics, medical colleges, and like institutions are properly being compiled;

"THEREFORE BE IT RESOLVED, That the Oklahoma State Medical Association memorialize the American Medical Association, and instruct its delegates thereto, to request the American Medical Association to adopt policies by which the American Medical Association shall not approve any institution for any purpose unless and until such institution shall be officially in the approved list of the component medical society or societies in the jurisdiction of which such hospital or institution is located or operates. Any institution failing of approval of the society or societies concerned shall have the right of appeal to and hearing before the proper committee of the American Medical Association."

On motion of Dr. McLain Rogers, the President was authorized to appoint a committee of three to compose the necessary machinery to carry out the instructions of the above resolution.

The following resolution was presented by Dr. S. D. Neely, and on motion, duly seconded, carried:

"By mandate from the Muskogee County Medical Society I submit the following names for membership on the HONORARY list, to be carried by the Oklahoma State Medical Association without payment of dues: Dr. F. L. Walton, Muskogee; and Dr. T. T. Shackelford, Haskell."

Dr. Shepard, Tulsa, introduced the following motion: That a committee on scientific exhibits be formed, and that the State Medical Association appoint a permanent committee to supervise and control this feature and request the Council to appro-

priate some funds to encourage and stimulate interest in these exhibits.

Dr. Earl McBride, Oklahoma City, seconded the motion; carried.

Dr. J. S. Fulton, Atoka, Chairman of the Legislative Committee, at this time augmented his written report by recommending that the House of Delegates go on record as approving the Basic Science Law and that organized medicine throughout Oklahoma use every effort to assist in the passage of such legislation.

The Basic Science Law was briefly explained by Dr. Horace Reed, Oklahoma City, who, at the conclusion of his remarks, moved that the supplementary report of the Legislative Committee be adopted.

Seconded by Dr. Walker, Shawnee. Adopted unanimously.

Dr. Louis H. Ritzhaupt, Guthrie, then addressed the House of Delegates, calling attention to the necessity of the members of the medical profession taking an active interest in the campaign for the passage of this law and in the selection of representatives and senators favorable to its enactment.

On motion, duly seconded, meeting adjourned to reconvene at 8:30 A.M., Wednesday, May 22nd.

HOUSE OF DELEGATES

May 22, 1934, 8:30 A.M.

Meeting called to order by the President, Dr. T. H. McCarley.

Report of the Credentials Committee, and after roll call, by county, the committee reported 67 present and voting.

The President next called for the nominations for President-elect. Dr. C. E. White, Muskogee, nominated Dr. M. K. Thompson, Muskogee, this being seconded by Dr. Mason. Dr. Ned Smith, Tulsa, nominated Dr. George R. Osborne, Tulsa. This nomination was seconded by Dr. Shepard, Tulsa. Dr. Barker, Guthrie, then nominated Dr. Louis H. Ritzhaupt, Guthrie; seconded by Drs. Johnson, Ardmore; Champ-
lin, Enid, and Terrell, Stigler.

Dr. J. S. Fulton, Atoka, then addressed the chair, as follows:

"I just want to call your attention to one matter. We have, ever since the amalgamation of the Indian Territory and the Oklahoma Territory, had a little custom for the east side of the state to name the President-elect one year and the west side the next, and we have never varied from this custom from year to year. It is time for the east side to name the President-elect this year, and while I feel very kindly toward Dr. Ritzhaupt and feel that he is entitled to the honor of being President, also that he is an invaluable man, yet I feel that it might not be advisable to deviate from the precedent which I have mentioned."

Dr. Todd, Oklahoma City, moved nominations close; seconded by Dr. Taylor, Holdenville. Carried.

The House of Delegates proceeded to ballot, with the result that Dr. Ritzhaupt was elected President-elect.

The two retiring delegates to the American Medical Association, Drs. Albert Cook, Tulsa, and Horace Reed, Oklahoma City, were nominated to succeed themselves.

There being no further nominations, these gentlemen were unanimously elected.

The only vacancy in any office at this time was that of Councilor of the First District, expiring this year. Dr. O. E. Templin, being unopposed, was re-elected.

Dr. Ritzhaupt, President-elect, was at this time introduced, and in a few well-chosen words expressed his appreciation of the honor which the House of Delegates had bestowed upon him, and promised to put forth his best efforts to carry on the duties of the office to which he had been elected.

The report of the Committee on Contract and Industrial Practice was then discussed by Dr. Aisenstadt of Picher, as follows:

"As a member of that committee which submitted this report, I should like to make a few remarks. That report was presented when we thought something might be done relative to the activity of the State Industrial fund or State Insurance fund. Since that time I have had personally some connection with the manager and find it will be impossible to make any headway with him. The state manager of this insurance fund is splendid material for a young bureaucrat in that he is self-sufficient and does not particularly care to receive any information or advice. So far as I know, this young man has had no experience in insurance at all, or no experience in taking advice. They ignore the medical profession. They do not care about the doctor and do not fear him. The state insurance seems to be surrounded by people of that kind. Their attitude is this: If they think you have given one or two or three or four treatments more than you should they are going to cut your bill, regardless of the fact that they didn't see the case and don't know what complications came up. I recently had a check submitted to me by the insurance fund in payment of a bill of \$10.50. The check was in the amount of \$10.00. I demanded to know why the bill was cut fifty cents, and my reply was that if I didn't like it I didn't have to do their work. It is not a question of reducing a bill for two hundred dollars or three hundred dollars, but of reducing a bill of \$10.50 to \$10.00. I have sent in bills of \$5.00 and \$6.00 and \$7.00 and every one was cut down without any explanation, except that if I didn't like it I didn't have to do the work. Mr. Knapp's attitude is terrible. I have taken the matter before the State Industrial Commission. Judge Doyle said: 'If you don't like it you don't have to do the work.' The State Insurance fund should be completely and forever divorced from the State Industrial Commission and should be handled through an entirely different agency. The State Insurance fund is put in operation to provide as cheap an insurance as possible and to give as much protection as possible to the employee. It is not the purpose of the State Insurance fund to make money. The state is not entitled to profit on that fund, yet Mr. Knapp and his commission try to make a name for themselves and save the State of Oklahoma a lot of money, and in their effort to make that they are making money on the State Insurance fund. They don't care about you and about me, and what are you going to do about it, because they are entrenched behind a mighty safe law, safe for the commission, of course, prepared by the Chairman of the State

Industrial Commission, and they are settled there to stay. You can get that changed only in one way, by legislation, and by legislation only in one way, and that is by taking advice and taking interest in politics and seeing that your legislature members will listen to your pleas and have this changed. Without that you have started state medicine. We have the beginning of state medicine now in the State Insurance fund, an organization controlled by laymen telling you doctors how many treatments you can give, how and when and where, and what you are going to charge. If that is not the beginning of state medicine, what is it?"

On motion, duly seconded, the report of this committee was adopted.

The President at this time declared the House of Delegates open for invitations for the next annual meeting.

Dr. H. C. Todd, Oklahoma City, invited the Association to Oklahoma City for 1935; seconded by Dr. Neely, Muskogee.

Dr. D. D. Roberts, Enid, invited them to Enid; seconded by Dr. O. E. Templin of Alva.

On motion of Dr. Howard, Chelsea, duly seconded, a standing vote was taken, with 36 votes for Oklahoma City and 16 for Enid.

Dr. P. M. McNeill, Oklahoma City, presented the following motion, seconded by Dr. Neely, which carried:

"That the President be empowered to appoint a Committee of Publicity to censure all publications to the press, from this and all other meetings of the Association."

A committee was then appointed by the President, composed of Drs. McNeill, Hays and Weber.

Report of the Committee on the Study and Control of Cancer was then read. Dr. J. S. Fulton made a motion that this report be adopted; seconded by Dr. Johnson, and recommended for consideration by the Council.

On motion by Dr. West, seconded by Dr. Chase, meeting adjourned.

FEDERAL RADIO COMMISSION

Washington, D. C., June 13, 1934.

Dr. L. S. Willour,
Secretary-Treasurer-Editor,
The Oklahoma State Medical Association,
Ainsworth Building,
McAlester, Oklahoma.
Dear Sir:

Receipt is acknowledged of your letter of June 6, 1934, transmitting a resolution opposing the exploitation of drugs, remedies, etc., over the radio, which was introduced before the House of Delegates at the annual meeting of the Oklahoma State Medical Association at Tulsa, on May 21 and 23, 1934.

Your formal expressions on this important matter are receiving the careful attention of the Commission.

Very truly yours,

HERBERT L. PETTEY,
Secretary.

LIST OF SCIENTIFIC EXHIBITS

Meeting of the Oklahoma State Medical Association
Tulsa, May 21, 22, 23, 1934.

Exhibitor	Address	Title
1 Ray M. Balyeat	Oklahoma City	Facial and Dental Deformities Due to Allergy in Childhood
2 W. E. Eastland and E. S. Lain	Oklahoma City	Birthmarks and Their Treatment.
3 Henry H. Turner	Oklahoma City	Endocrinopathies.
4 Curt von Wedel	Oklahoma City	Plastic Surgery.
5 American Society for Control of Cancer		(Arrived too late for exhibit.)
6 McBride Reconstruction Clinic and Hospital	Oklahoma City	Arthritis.
7 E. Rankin Denny	Tulsa	The Passive Transfer Test as Applied to Allergy (mo. picture).
8 Ian MacKenzie	Tulsa	Orthopedic Appliances, Crippled Children's Home.
9 M. B. Lhevine—Morningside Hospital	Tulsa	X-Rays.
10 I. A. Nelson—St. John's Hospital	Tulsa	Gross Pathological Specimens; Granulopenia.
11 W. S. Larrabee and Margaret Hudson	Tulsa	X-Rays, Blood Dyscrasias; Friedman's Test for Pregnancy.
12 Ruric N. Smith	Tulsa	Foreign Bodies Removed From the Air and Food Passages.
13 Carl Hotz	Tulsa	Functional Treatment of Fractures With the Direct Cast.
14 R. M. Shepard	Tulsa	X-Rays of Chest; Stastical Study of the Mantoux.
15 C. E. Bradley and Hugh Evans	Tulsa	A Case of Schuller-Christian Disease.
16 R. C. Pigford and H. A. Ruprecht	Tulsa	Electrocardiograms.

ABSTRACTS « REVIEWS « COMMENTS AND CORRESPONDENCE

Copied from the bulletin of the Oklahoma County Medical Society, by permission of the author:

"I read in the April bulletin of the Oklahoma County Medical Society the article by Dr. Horace Reed, entitled 'Damage Suits'. He calls attention to the numerous damage and malpractice suits that are being instituted against physicians. He especially mentions the regrettable fact that members of the Oklahoma County Medical Society are being employed by the claimants to give testimony that is questionable, and sometimes malicious. I consider that the compensation that they receive is more of a bribe than it is a fee. I believe that something should be done to restrain these men in this wrong they are committing. I am not sure as to the best method of bringing about this reform. It is certainly a stigma upon our profession if their only reform must come to them from without. There is a bigger and better reform that should come from within.

"The thought of this better reform comes to me from the fact that on the same day that I received our county bulletin there came to my desk the weekly pamphlet giving the proceedings of the staff meeting of the Mayo Clinic. This last number contained an address by Dr. W. J. Mayo, delivered at a dinner given in honor of Dr. Arnold Schwyzer, of St. Paul, Minnesota. One of the most beautiful characteristics that I have observed in the conversation and writings of Dr. W. J. Mayo is the frequency with which he mentions the work accomplished by Dr. Charles Mayo, his younger brother. I am sure this frequent kindly reference to his brother is almost unconscious on his part, and comes simply as an expression of their absolute mutual confidence. There has never been the slightest suggestion of selfishness or jealousy between them. In this dinner address, to which I have referred, he used the words, 'My Brother and I,' three times, and as I observed the expression 'My Brother and I,' there came to me thoughts of the enormous possibilities of what that 'My Brother and I' had brought to them. Surely a great measure of their phenomenal success has resulted from their loyalty and fidelity the one to the other, for truly there has always been between them that inseparable union of 'My Brother and I'.

"I have no relatives in the State of Oklahoma, but I want to feel, and I do feel, that in the Oklahoma County Medical Society I have more than two hundred brother physicians upon whom I may rely for counsel and assistance in the many problems that beset me in my work. And I feel that every physician in this organization is entitled to the same thing.

"We are all familiar with that incident recorded in the Bible where Cain, in a fit of jealous anger, had slain his brother, Abel. When Almighty God asked him as to the whereabouts of his brother he evaded the question by asking, 'Am I my brother's keeper?' It may not be incumbent upon me to be my brother's keeper, but I do feel that it is my duty and privilege to be my brother's brother. I do not wish to be your medical opponent, I wish to be your medical brother. I do not wish to be your doctor, I wish to be your doctor brother. I do not

wish to be your professional competitor, I wish to be your professional brother.

"And it is my sincere desire that the medical profession around the world may rise to higher levels, and each of us become imbued with that spirit that fills the mind and heart of Dr. W. J. Mayo when he says 'My Brother and I'."

—J. M. Alford.

EYE, EAR, NOSE and THROAT

Edited by Marvin D. Henley, M.D.
911 Medical Arts Bldg., Tulsa

Surgical Treatment of Iridocyclitis. A. Fuchs, M.D., Vienna, Austria. Archives of Ophthalmology, April, 1934.

An axiom of Fuchs', is: Patients with active iritis should be operated on only as an urgent measure for saving the eye, and only the most sparing and least radical operations should be performed. Operative measures in iritis are instituted for two reasons i.e., to combat rise in pressure and for optic reasons.

Operations for reducing an increase in pressure are divided under four headings:

(a) In cases of severe rheumatic iritis, which do not react to milk injections, surprisingly good results are sometimes obtained by gluteal injections of chini-fon with casein. The temptation here is to do a paracentesis for drainage which as a rule is not successful because of the suffering to the patient and the frequent hemorrhage accompanying or following the operation. Hemorrhage is considered as a distinct complication.

(b) In cases of chronic iritis with a gradual course increase in pressure is due to an annular posterior synechia and produces an umbrella iris (iris bombe'). This condition is rare in Austria due to the performance of a preventive iridectomy but is very common in China, both eyes many times being affected. Soft eyeballs with an iris bombe' are not considered good operative risks since the softness indicates a severe inflammation of the ciliary body. In iris bombe' if the angle of the chamber is not completely closed an iridectomy is done; if this is completely closed and there is no room for introduction of the lancet, a transfixion as worked out by the elder Fuchs is performed. Details of this procedure are given. The end result is four holes in the iris and the increased pressure disappears if the umbrella iris has not been present longer than fourteen days. In cases of iris bombe' of long standing a transfixion is done and then a week or two later an iridectomy is performed. The iridectomy cannot be done immediately following a transfixion since the aqueous humor has escaped and we have a soft eyeball without an anterior chamber. Salzmann's iridectomy ab externo, an operation little known and practiced but possessing many advantages, is given step by step. The three advantages mentioned for operation are: the ease with which the eyeball is

fixated, there is practically no bleeding during operation and the operation seems to be much less severe for the eye.

(c) Cases of increased pressure due to iritis serosa; An attempt is made to keep the pressure reduced by a simple puncture; if the reduced pressure that follows lasts for eight days or more then the puncture is repeated but if it lasts for a shorter period then a greater operation is performed such as an Elliot trephination.

(d) In cases of increased pressure due to iritis as a result of diabetes after a successful cataract extraction: This may occur several weeks or months post-operative. A simple puncture relieves but unfortunately these attacks are prone to recur and not even greater operations will many times save the vision.

Operations for optic reasons are divided into three parts in cases of fresh iridocyclitis, dulness of the cornea, coatings on the posterior wall of the cornea and exudation into the pupil and opacities of the vitreous humor. After subsidence of the fresh symptoms there are the following optic disturbances:

(a) Pupillary membrane—which is much more easily differentiated from a complicating cloudiness of the lens by means of the slit lamp.

(b) Complicated cataract. With the slit lamp the degree of cloudiness of the lens can be determined. If the lens is only slightly opaque then there is liable to be impaired vision even after successful removal of lens due to thick opacities in the vitreous humor. It is a fine point in surgical judgment to determine the amount of useful vision a patient may have when removing opaque complicated lens when there is also involvement in the vitreous.

(c) Opacities of the vitreous humor are the worst optic disturbances in cases of chronic iridocyclitis. In most cases they consist of exudate cells discharged by the ciliary body and absorbed slowly if at all.

The author closes with a plea for a more careful study of pathologic anatomy. He cites instances of slides of quite old cases of iridocyclitis with the iris still full of plasma cells and with round cell infiltrates in the ciliary body.

The Lymphatic System in Relation to Recurrent Laryngeal Nerve Paralysis Secondary to Cancer of the Breast. H. W. Schwartz, Halifax, Canada. *The Journal of Laryngology and Otology*, April, 1934.

The essayist reviews the sixteen previously reported cases and reports a recurrent laryngeal paralysis, secondary to cancer of the breast. The first publication on this subject was by Dr. A. Logan Turner, in 1921, who said: "Pressure upon recurrent laryngeal branches of the vagus as a result of glandular enlargement consequent upon malignant tumor of the breast has not received much attention, although malignant lymphatic glands in the neck and mediastinum are recognized as fairly common causes of recurrent nerve paralysis, the sequence—cancer of the mamma, secondary glandular enlargement, vocal cord paralysis—is not referred to in any of the standard text books to which I have access." He adds: "An attempt was made to demonstrate the lymph paths along which the cancer cells had spread and led to secondary infection and enlargement of mediastinal glands, with consequent compression of one or other recurrent laryngeal nerve." He reported six cases.

The case reported is that of a female, age 25, who discovered a small lump in her left breast. Three

months after discovery this was removed and reported benign by the pathologist. The surgical incision healed promptly and broke down into an ulcerated area five months later which increased in size. About two years from the discovery of the original lump, enlarged axillary glands were biopsied and reported carcinoma. Three months later she consented to deep x-ray therapy. About two months later she was admitted to the hospital with "a discharging sore of the left breast" and "a swollen and painful neck." Dyspnoea, dysphasia, dysphonia and a cough were additional complaints. Laryngeal examination showed an immobile left vocal cord but was otherwise negative. Her death occurred about two and a half years from the inception of the initial lesion. Post mortem was refused.

The vocal cord paralysis was probably due to pressure resulting from an extension of the cancer cells into the lymph glands along the recurrent lymphatic laryngeal pathway. Turner maintains that the lymphatic extension into the supraclavicular lymph glands must occur by a passage anterior to the clavicle. This is a disputed point by later investigators. In all the seventeen cases reported in the literature there have been no post mortems obtained. To be dictatorial on the fundamental principle of this condition considering the paucity of details of some of the reported cases would be impossible. It would seem that Turner's original manuscript is subject to some correction in its more essential points in light of more recent observations. The author believes that in the greater number of cases that the infection travels by way of the substernal route or by way of the axilla and infraclavicular glands to reach the internal jugular chain, which in turn has an afferent, the paratracheal distribution.

The Otologic Management of Progressive Deafness. Coates and Gordon, Philadelphia. *The Laryngoscope*, April, 1934.

This discussion is limited to the otologist's concern of progressive deafness omitting otosclerosis, deaf-mutism, etc. It is for the hard of hearing who cannot be definitely diagnosed as having otosclerosis, that proper treatment must be given, not only to allay the deterioration in hearing acuity, but if possible to increase the power of perception. A very thorough history is necessary, a careful examination both local and general should be given each patient to determine whether or not hereditary deafness is truly otosclerosis or whether it is the result of an infection of some kind such as syphilis, inherited or otherwise, acute contagious diseases, infections of the upper respiratory system as well as more remote parts, poor health habits (including diet), inter-marriage of persons with a family history of deafness, swimming, improper nose blowing and decayed teeth. These must all be taken into consideration. A closer relationship should be formed between the medical profession and the general public, especially health leaders and school authorities, if aid for one of the most essential needs—that of good hearing—is to be helpfully put before the public.

It is believed by some that a primary focus of infection exists in every case of progressive deafness; that it may increase or remain in a latent state. When possible. Emerson advises the removal of every trace of infection. The processes have been found in the teeth, tonsils and sinuses, in all lymphoid structures of the epipharynx, laryngopharynx, as well as in and around the lateral pharyngeal folds and Rosenmüller's fossa. The intestinal tract, the appendix and the gall bladder must not be neglected. If an acute

or chronic sinusitis, particularly the maxillary sinus, is present free drainage should immediately be made possible by surgery. Clinical observations including the use of roentgenray aided by the use of radiopaque oil show a latent sinusitis, the removal of which might prevent aural complications resulting in deafness, either partial or entire.

Authorities differ as to whether atrophied mucous membranes are sources of infection. Seemingly it is not the amount of toxin but their virulence which is the determining factor as to their effect being general or local. Pus and polypi in the antrum apparently cause little trouble. That chronic progressive deafness begins in childhood, is impressive since in a study of two hundred patients thirty-two per cent attributed their deafness to nasopharyngeal disease in childhood. A child with adenoids is seldom seen to have a normal ear drum. It is of the utmost importance to conserve the hearing in infancy and childhood. If irreparable damage has not been done to the perceptive apparatus improvement should be shown when the source of infection is removed. Diverse opinions are given regarding local measures. Equally good authorities are cited as to the feasibility of local treatments in the nose, nasopharynx and Eustachian tube as well as the correction of anatomic anomalies including Politzerization. The writer believes the best results are obtained by combining the removal of the foci of infection and careful inflation of the tube. One authority reports good results with diathermy. Far from least in importance is the moral support of the otologist to his patient. Where deafness is incurable he has not fulfilled his duty until he has familiarized his patient with the various mechanical aids to hearing. The moral and economic advantages of lip reading should be so impressed upon the patient that he will be actively interested in living a normal life.

Persistence of Apparent Sinus Pain After Multiple Operations. Samuel R. Skillern, Jr., M.D., Philadelphia. *Archives of Otolaryngology*, April, 1934.

Skillern conceived a novel means of attempting to solve the problem of the why-for of apparent sinus pain which persists after one or more sinus operations. He wrote to several prominent otolaryngologists as well as a neurologist asking them for their explanation of this condition. The publication consists chiefly of the replies in whole or in part from about seventeen of these men giving their various theories as to the cause of the continued pain. It is interesting to note the diversity of opinions rendered by the leaders in the field of otolaryngology in America.

We have listed below about twenty different ideas advanced by almost as many different men:

Incomplete operation; neurotic condition of the patient; neuritis of branches of the fifth nerve; the disease is elsewhere than in the sinuses operated on; blockage due to scar or swollen tissue; catching of sensory fibres in scar tissue; incorrect diagnosis or an incomplete operation; fibrous web producing a pocket in which there is a stasis; scars near the vidian nerve; a cell developed in the crista galli; early carcinoma of the fossa of Rosenmueller; unnecessary operations on the ethmoids and turbinates; interference with the infra-orbital nerve or its branches; diversion of air currents following operation, permitting the main air jet to be projected against some sensitive area, such as the branches of the nasal ganglion; sham or imaginary pain; low grade pachymeningitis; definite osteomyelitis; destruction of too much

mucous membrane during operation; glossopharyngeal nerve; nasopalatine ganglion.

There are other reasons advanced but those enumerated above give a general idea of how great is the difference of opinion. Some of the men with thirty to forty years experience in this special field say frankly that they are still unable to evaluate thoroughly the complete significance of symptomatic pain.

Before any surgery is done at all a useful test is that of cocainization of the sphenopalatine ganglion and the fifth nerve. If anaesthesia results and the pain persists then there is no involvement of these nerves. If this precaution had always been taken, a great deal of useless surgery would have been avoided. In one clinic there were 143 cases of unexplained and unrelieved pain or so-called "atypical neuralgia" taken and analyzed. It was found that the pain did not follow the direction of the divisions of the trigeminal nerve but jumped across anatomic boundaries of the trifacial, even into the neck and arm; that the character of the pain suggested a disturbance of the sense of pressure; that the pain is usually continuous with exacerbations and remissions; that the pain is deep seated; that sympathetic disturbances are associated with pain; that this disease occurs more frequently in women than in men; there is no common etiological factor; that all forms of treatments, operations and drugs have failed to relieve.

A thorough examination by a competent neurologist before any surgery is attempted will aid in avoiding this pitfall. The relativity of pain also must not be overlooked. The author quotes a patient as saying, "A sinus infection so lowers our morale that it makes cowards of us all." A pain which before a massive sinus infection might be of small significance after the ordeal of the massive sinus infection assumes alarming proportions.

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
LeRoy Long Clinic

714 Medical Arts Bldg., Oklahoma City

Thyroid Disease in Children. By Arnold Jackson, M. D., *The Journal-Lancet*, December, 1933.

Thyroid disease in children is one of the most important, yet generally neglected problems confronting the medical profession. Estimates have been made that at least 25,000,000 persons are afflicted with thyroid disease, a considerable number of whom are children. Certainly more people are affected by thyroid disease in this country than are suffering from the three great plagues, tuberculosis, cancer, and syphilis.

Perhaps goiter does not arouse as much apprehension and concern as do these scourges because its immediate effects are not as apparent. The number of persons, however, having heart disease, hypertension, cretinism and mental inferiority as an end result of thyroid disturbance constitutes an ever increasing challenge to medical science.

The problem of the national prevention of goiter is complicated for the following reasons: No one has been able to estimate the exact limit of the goiter belt in this country. Exactly what constitutes a goiter is still another problem.

When the child's neck assumes a convex rather

than a concave appearance, when a definite enlargement of the lobes may be palpated between the index finger and thumb, or when the presence of an adenoma may be felt, goiter may be assumed to be present.

Jackson has just completed a ten-year study on a group of one thousand children that he has treated with the idea of preventing goiter. This test was carried out in Madison, Wisconsin, a locality where the incidence of goiter is probably as high as any place in the United States. At the age of 18, over 80 per cent of the girls show evidence of thyroid enlargement and approximately 20 per cent of the boys.

From his ten years' study of the same children he has come to the following conclusions: 1. If iodine medication is started sufficiently early it is possible not only to prevent the development of colloid, but also of adenomatous goiter. 2. A colloid goiter, when well developed, seldom responds permanently to treatment, either with thyroid or iodine medication. 3. The majority if not all adenomata develop before maturity and consequently, except during pregnancy, iodine therapy is not indicated as a prophylaxis in adults. 4. No amount of iodine or thyroid will irradiate the smallest adenoma. 5. Iodine should be administered during pregnancy to lessen the demand on the mother's thyroid as well as supply the needs of the child.

In this group of a thousand children, it is important to know that not a single adenomatous goiter developed when medication was instituted sufficiently early. On the other hand, thyroid and iodine medication have had little effect on the majority of well-developed colloid goiters. This later finding is in contrast to the observations of Marine and Kimball, who reported almost a complete disappearance of the signs of goiter after a three-year study on groups of school children.

Iodine and thyroid place the thyroid gland at rest in the presence of a colloid goiter and prevent the development of the second stage or adenomatous goiter. The theory that the latter develops as a form of compensatory hypertrophy in the presence of a neglected colloid goiter appears to be correct.

In his work, Jackson has used many preparations of iodine and has found no one of them to be of any greater potency than another. He prefers, however, the tablets used by the Swiss, known as iodostarine. Each of these tablets contains ten milligrams of iodine and one tablet a week is prescribed from the age of four till ten, two between ten and fifteen, and three from fifteen to twenty-one.

As to the frequently asked question about the value of wholesale distribution of iodine through the various mediums of water, salt, etc., he has this to say: The prophylactic use of iodized water has proved economically unsound. He is not sure that iodized salt does harm to a child, but he is rather of the opinion that it may do harm to adults. If we believe that adenomatous goiters have their inception before the age of maturity, there is no reason for every grocer and druggist dispensing an unknown amount of iodine to our adult population. He does not believe in McClure's theory that iodine salt has been a factor in reducing the incidence of toxic goiter in Michigan, because of the decrease in thyroidectomies in Detroit hospitals. There have been fewer thyroidectomies in Minnesota and Wisconsin as well, and the reason, he thinks, is due to the de-

pression and general improvement in health with fewer epidemics, such as influenza, rather than to the administration of iodized salt. Iodized salt has not been used in Minnesota and Wisconsin.

—LeRoy Long, Jr.

Metastasis From Testicular Teratoma With Demonstration of Prolan A in the Urine: Report of a Case. By H. L. Smith, M. D., and R. L. Parker, M. D., Proceedings of the Staff Meetings of the Mayo Clinic, May 30, 1934.

A man 33 years of age, married, with four children, had a large testicle removed three years before he came to the Mayo Clinic. Two years later a large mass developed in the right upper quadrant of the abdomen. Because of the history of removal of a tumor of the right testis three years before, and the later occurrence of a tumor in the upper part of the abdomen, they suspected that the abdominal tumor was metastatic. A Friedman test (which means the use of the rabbit) was strongly positive in this case. They therefore felt certain that this was a metastatic tumor from the testis.

For some years it has been known that prolane A, the secretion of the anterior lobe of the pituitary body, is present in varying amounts in the presence of certain malignant tumors, and especially in the presence of tumors of the sex glands. R. S. Ferguson, of the Memorial Hospital in New York, has done some extremely important work on this subject and has reported more than a hundred cases in which he has found that the qualitative determination of prolane A was a very important factor in diagnosis, in classifying the type of tumor, and in prognosis.

Ferguson has stated that this test should be carried out with mice rather than with the rabbit. He has demonstrated that in order to make a quantitative estimate of prolane A, the use of a single animal, such as the rabbit, or a single qualitative test designated to designate the number of units of hormone would be insufficient. His technique requires the injection of fresh morning urine in a large series of immature female mice which are observed over a period of forty-eight hours. He has been able to demonstrate the existence of prolane A in quantities as small as fifty units per liter of urine. In this way not alone can the degree of virulence of the neoplasm be estimated, but the effect of the treatment can be accurately established and the prognosis can be determined. In his first group of one hundred and seventeen consecutive cases of teratoma of the testis evidence of prolane A was present in every one. He found that irradiation of the primary tumor and its metastasis causes a decrease of prolane A. He also found that with the spread of metastasis there may be increase in prolane A which is evident before clinical detection of the lesion is possible. Recently Hinman, of San Francisco, has reported a large series of testicular tumors observed at his clinic and his studies largely corroborate Ferguson's observations.

It is evident that intelligent treatment of this condition must be accompanied by a quantitative estimate of prolane A. While it is true that this will require extensive laboratory equipment, including a large number of immature mice, nevertheless, Ferguson believes that the number would not necessarily be as great as one might think; in fact, that several hundred mice would be sufficient to meet the ordinary demands.

—LeRoy Long, Jr., M. D.

The Immediate Treatment of Injuries of Joints Without Fracture by the Intraligamentous Injection of Novocain (*Traitement Immédiat Des Traumatismes Articulaires Sans Fracture par les Injections Intraligamentaires de Novocaïne*). By G. Arnulf and Ph. Friehe, of the University Lyons. *La Presse Médicale*, April 14, 1934.

The article begins with a reference to the important work of Professor Leriche who, in an article published in *La Presse Médicale* in May, 1930, laid down the foundation for the treatment of injuries of joints without fracture, by the injection of a solution of novocain into the ligamentous structures about the joints.

In his first article Leriche called attention to the extraordinary richness of terminal sensory fibers in the periarticular structures.

Apparently, the most common injury under consideration is what is usually referred to as sprain. The authors quote Leriche again to the effect that sprain is characterized by a traumatism of the ligamentous structures without rupture, without separation from the bony structures, the effects of the sprain being due particularly to damage of the sensory corpuscles in the ligaments about the joint. They indicate that Leriche believes that the brusque damage results in a vaso-motor dysfunction, from whence there is oedema, local elevation of temperature, interference with function, and rapid muscular atrophy.

It is advised that the injections of novocain be made soon after the injury, but it is believed that there is at least some relief even when the injections are made a considerable time afterwards.

The joints most easily approachable are the elbow, knee, ankle and articulations of the fingers. The shoulder joint and the hip joint may be treated in the same way, but with more difficulty.

After being sure that there is no actual damage to the bony structures, the skin surface is sterilized in a proper way, and novocain in the strength of one-half to one per cent is injected at various sites about the joint, the object being to place the injections in the periarticular structures, and not in the joint itself, although accidental penetration of the joint would probably not be of any considerable importance. The injection is usually begun at some area more distinctly tender and swollen than the areas about it. Usually the quantity of novocain solution does not surpass 25 cc. to 30 cc.

There are a number of case reports, of which the following is rather typical: An employee of a hospital had a hard fall on a sidewalk. He was able to get up and take several steps, but at the price of violent pains about the right ankle. He was brought to the service of Professor Leriche a few hours later. There was slight tumefaction of the instep, and exquisite tenderness over the internal lateral ligament of the ankle. There were no evidences of fracture. Novocain solution, about 30 cc. in all, was injected about the joint, the most of it being on the inner side. The patient was entirely relieved within a few minutes, and in half an hour was able to walk away without pain. Two days later he limped a little, and complained of a little annoyance on walking. There was still a little swelling of the foot. Another injection was made, and he went back to work. There was no additional difficulty, with the exception of a little stiffness for eight days. The cure was complete.

Comment: This method of treating recent sprains is not well known, but it appears to be reasonable,

and, taking into consideration its apparent simplicity and safety, it is probable that it should be employed more often.

In this connection, it is interesting to note that in the service of Professor Leriche the injection of novocain solution about an injured joint, with pain and stiffness some weeks after injury, has been carried out for several years in order to determine whether there is actual fixation of the joint. Leriche and his associates have been able to show that if there is no inflammatory fixation it is usually possible for the patient to move the joint without much difficulty following the injection of the solution into the surrounding structures. This is a diagnostic point of considerable importance. We have used it with satisfaction.

—LeRoy Long.

Combined Intra-abdominal and Intravaginal Radium Treatment in Cancer of the Cervix. George Gellhorn, M. D., St. Louis, Mo. *Surgery, Gynecology and Obstetrics*, May, 1934, Page 879.

Dr. Gellhorn has here briefly described a technic of applying gold radium emanation seeds into the pelvic tissues through an abdominal incision in advanced cancer of the cervix. This is combined with intra-uterine and vaginal radium applications and the radium emanation seeds are placed accurately by having the fingers of one hand in the vagina and the other hand in the abdominal cavity. The principle upon which this work has been started and continued is the fact that radiation can be more evenly distributed over the pelvic area than by intra-uterine or vaginal radiation alone.

They have gradually increased the dosage until now the arbitrary average is from 4200 to 4500 milligram hours.

He points out the fact that in this way not only can the radiation be more evenly distributed, but by such examination even small extensions can be definitely identified and radium applied.

They have had no more postoperative complications than would occur in ordinary abdominal procedures, and the wounds have healed well.

They started this work in 1930 and have only used it in a few advanced cases each year with better end results so far in a small series than by the ordinary irradiation treatment employed at the Barnard Free Skin and Cancer Hospital.

Recently they have been doing this radium application three weeks following external x-ray treatment of the pelvis.

Dr. Gellhorn admits that the series is small and the time is inadequate for proper evaluation of the merits of the procedure, but calls attention to this method, the logical basis for it and the reasonably good results obtained so far.

Comment: One of the difficult features of irradiation treatment of cancer of the cervix has been the inadequate treatment of the pelvic glands, particularly the iliac group. Many workers have attempted to devise methods of combined intra-abdominal and intra-vaginal radiation. For example, Delporte and Cahen, of Brussels, have introduced radium needles into the pelvic cavity, together with gauze packing, and have re-operated upon these patients to remove the radium and the gauze packing.

Whether or not this scheme of the employment of intra-abdominal radium emanation seeds combined with intra-vaginal radium and external x-ray will

materially increase the cure rate will depend upon time, but it is a rather rational step in the direction that has always been one of the weak features of irradiation treatment alone for cancer of the cervix.

—Wendell Long.

Reconstruction of the Vagina. Marion Douglass, M. D., Cleveland, Ohio. *Surgery, Gynecology and Obstetrics*, June, 1934, Page 982.

This author reviews the history and the principles of the various methods of the construction of a vagina. He reports a case and describes the technic of an operation using four pedicle flaps accomplished in one stage. One of the objections to the pedicle procedure has been the multiple stage character of it. This author reports good healing and excellent results in this one patient. He points out that it is safe and satisfactory. One of the objections to the employment of portions of the intestinal tract for a new vagina has been the rather high mortality and the principal objection to the pedicle type of reconstruction from labia minora or the inner surface of the thighs has been the multiple stages necessary in order to assure good blood supply of the pedicle.

Comment: While it is true that this author has reported but a single case and possibly in additional cases the pedicles so employed in one stage may not be as visible as in this one, the procedure has definite advantages if proven satisfactory, in that it avoids the tedious multiple operations necessary.

Wendell Long.

Cancer of the Vulva. Bernard F. Schreiner, M. D., and William H. Wehr, M. D., Buffalo, New York. *Surgery, Gynecology and Obstetrics*, June, 1934.

These authors are reporting 118 cases of cancer of the vulva. These represent 1 per cent of all the cancer cases seen in the State Institute for the Study of Malignant Diseases in Buffalo, New York, and 5 per cent of all the female genital cancers, not including the urethra. This, they feel, is evidence of the fact that the disease is not rare.

Cancer of the vulva is very closely associated with preceding kraurosis and leukoplasic vulvitis. Therefore, radical treatment of these conditions is important in the prevention of this disease.

Practically all cancers of the vulva are epitheliomas, as demonstrated in this series of 115 out of 118.

The best treatment of cancer of the vulva has not yet been established. There are certain men, particularly Taussig, who believe that treatment of choice is radical surgery. Others resort to surgery, irradiation and combinations. This series of cases, many of which were advanced, was best handled by coagulation of the local lesion and heavily filtered irradiation over the lymph bearing areas.

A short review of the results of treatment in other clinics reveals a five-year cure rate of from 7 to 34 per cent. In this series only 72 of the 118 cases were treated five or more years ago. They have divided these into three groups:

Group 1. Local lesion with no clinical signs of metastases in the groins.

Group 2. Local lesion with metastases in one or both groins.

Group 3. Those who had had either local excision or radical operation followed by recurrence.

In group 1 the five-year cure rate was 31.5 per cent. None of the group 2 cases resulted in five-year healings. Ten per cent of the group 3 cases resulted in 5-year cures. The absolute statistics of all the 72 cases shows 18 per cent 5-year cures.

They point out that cancer of the vulva is a very malignant disease and prone to recur after apparent cure. The only hope of eradicating it is by early recognition and radical destruction, with their preference for coagulation plus heavily filtered irradiation. Healings of five years are very exceptional after there are metastases in the groins.

They emphasize again the importance of radical treatment of leukoplasic vulvitis kraurosis in the field of prevention.

Comment: This is a very good report of a condition not frequently encountered by the general man, and it concisely outlines the principles of etiology, treatment and the prognosis for such cases.

Wendell Long.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D.
717 North Robinson Street, Oklahoma City.

Spastic Paraplegia (Little's Disease). Treatment by Repeated Cisternal Drainage. Norman W. Clein. *Northwest Med.*, Vol. XXXII, P. 507, 1933.

The author has treated ten babies ranging in age from one to thirty-four months. The amount of fluid obtained varied from 10 cubic centimeters to 70 cubic centimeters, the average being 42.5 cubic centimeters. From two to four times the amount of fluid may be obtained by this method than by spinal puncture. The greatest relief is noted in spastics with a history of birthday injury. The indications for repeated drainage are listlessness, poor appetite, loss of weight, and increased spasticity. The drainages are followed by a dry or semi-dry diet with elimination of salt and sugar.

The Common Syndrome of Rupture, Dislocation and Elongation of the Long Head of the Biceps Brachii. An Analysis of One Hundred Cases. Edgar Lorrington Gilcreest. *Surg. Gynec. Obstet.*, Vol. LVIII, P. 322, Feb. 15, 1934.

The writer considers that many diagnoses of sprains, neuritis, subdeltoid bursitis, rupture of the supraspinatus muscle, and particularly arthritis, are made when the symptoms and findings are truly those of the common bicipital syndrome. He describes the syndrome as being due to "wear and tear, complete destruction and rupture and dislocation and elongation of the tendon of the long head of the biceps".

The causes are varied—pathological and physiopathological conditions or degenerative changes, acute and chronic infectious diseases and neoplasms, physiological predispositions, occupation, fatigue and trauma.

The types of rupture may be classified to their site as high (intracapsular) or low (at or below bicipital groove); or according to their development as acute, latent, or intermediate.

The symptoms vary with the condition of the tendon, the cause, the site, and the type of rupture. In a frayed tendon, the final rupture may occur without the knowledge of the patient and the only com-

plaint may be weakness and discomfort. Weakness is a constant symptom. Inspection shows some alteration in shape of the shoulder, and in the arm there may be a tumor, or hollow, or ecchymosis and swelling. Palpation may reveal muscle softening, abnormal perceptibility of the tendon, and changes in tension.

The treatment depends upon an exact diagnosis, and incision is made where one expects to find the lesion. Simple rest in acute flexion for two or three weeks is adequate for lesser tears. Massage should not be started until the arm is being gradually brought down.

In operative repair, the writer favors slipping the long head tendon through the short head and then attaching it to the coracoid. If the rupture is in the muscle proper, a large fascial transplant, as well as suturing, should be done. The prognosis is good for function in early reporis, but varies with the chronicity and extent of injury. The medicolegal aspect is noted.

The study is made from an analysis of 100 cases, and the accompanying illustrations are excellent.

"Zur Frage der Palsterung des Gipsverbandes bu Behandlung der Knochenbrücke" (Padded and Unpadded Casts in the Treatment of Fractures). *Wien Klinische Wochenschrift*. Feb. 2, 1934. Publ. No. 5 Rudolfin Hosp., Wien, Austria. Prof. Otto Frisch.

Following the publications of Schnek, 1931, concerning his success in the Wien Emergency Hospital with Bohler in the use of unpadded casts in the treatment of fractures, the author observed, and in this articles compares the merits of such procedure as to its preference or undesirability in relation to padded casts, in a large series of his patients.

Unpadded casts were first introduced in fracture therapy by Bordeleben in 1890, and have proved advantageous over padded ones in some conditions. The basic and significant objection to unpadded circular cases is the tendency to diminish vascular, and consequently, nutritional supply to parts enclosed. This fact was, apparently, overlooked by Schnek. Other disadvantages encountered are, due to absolute inelasticity, making the unpadded cast undesirable in the majority of cases, because swelling of the affected parts may be always expected. Again, in cases of large hematoma, a marked diminution in size of the affected part may occur in seven to ten days, and when unpadded casts are used a partial loss of constant and efficient immobilization results, a factor much less frequent in padded casts. The cases treated by padded casts during the past five years in Bohler's clinic reveal none of the skin or other complications such as are seen in the Schnek's cases.

The author mentions the fact that although practical in selected instances, the general practitioner cannot use the unpadded cast with impunity. Contrary to Schnek, he also maintains that padded casts are easier to cut and in most instances do permit more motion in affected parts than do unpadded ones.

The author indicates his familiarity with a series of several thousand padded casts and their relative merits, as for instance, an elasticity permitting swelling, which will retract and so maintain the best available support. The author then indicates his particular procedure, materials used, etc. A properly applied padded cast is less painful than a similar un-

padded one and has less tendency to decubitus and less danger of cutting the body during removal.

The author recognizes the convenience of the unpadded casts in ambulatory patients, but considers such at too great a risk. He does, however, frequently employ the unpadded cast in fracture of the forearm or lower leg, as the second cast, applied three or four weeks after injury.

(The above article was translated by Paul H. Rempel, M. D.)

COCOMALT

The importance of milk as part of the dietary in post-operative and convalescent cases cannot be overestimated. It is—and rightly so—the principal dependence of the diet.

But many patients have a natural dislike for milk, and others soon grow tired of the monotony of milk, milk, milk, day after day.

There is a way, however, in which the modern physician can overcome this aversion to milk—this distaste for a steady milk diet. The thing to do is to flavor the milk in a way that makes the color and taste interesting and inviting to the patient, yet does not alter the basic fundamentals of the milk itself.

Cocomalt, for example, converts milk into a delicious chocolate flavor food-drink that is tempting to the fussiest invalid. Even those who actually dislike milk and refuse to drink it, welcome the refreshing flavor of Cocomalt. Not only does it tempt the sick and lagging appetites by its palatability: Cocomalt substantially increases the nutritive value of milk. Every cup or glass of Cocomalt a patient drinks (made as directed) is equal in food-energy value to almost two glasses of milk alone.

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PAINFUL HEELS AMONG CHILDREN (APOPHYSITIS)

Henry W. Meyerding and Walter G. Stuck, Rochester, Minn. (*Journal A. M. A.*, May 19, 1934), state that apophysitis of the heel can be clearly distinguished from any similar syndrome on the basis of: (1) the restricted age incidence (from 10 to 17 years), (2) aggravation of symptoms by forced dorsiflexion of the foot, (3) prompt relief of symptoms by elevation of the heel of the shoe, (4) absence of general disease, (5) sharply localized tenderness over the attachment of the achilles tendon and (6) the characteristic roentgenographic appearance. The treatment of this condition is palliative. As a general measure, any focus of infection should be removed. Local heat and massage to the feet in the interval of acute pain may relieve the pain somewhat. The most efficacious treatment consists of elevation of the heels to relieve tension on the achilles tendon. Heel pads in the shoes are also of benefit and the avoidance of any strenuous exertion is indicated until the acute phase of the condition is over. In the more severe or resistant cases it may become necessary to immobilize the foot, in slight plantar flexion, for several weeks with plaster-of-paris casts. Following this, the heels

of the shoes must be raised to prevent any recurrence of symptoms. Symptoms subside promptly under such a regimen and the condition disappears when the patients reach the age of 17 years, when the epiphyses become completely united. A factor that doubtless contributes to the frequency of this disease is the common modern practice of boys engaging in various games in heelless athletic shoes. This undue strain on the calcaneal epiphysis during the period of greatest growth of the bones no doubt engenders an appreciable amount of epiphyseal changes that is never discovered. Therefore, the authors conclude that destructive changes in the epiphyses of the heels are common among young, vigorous children, and that failure to recognize them depends on an absence of symptoms and consequent neglect in obtaining roentgenograms.

SUMMER DIARRHEA IN BABIES

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THE JOURNAL

OF THE
OKLAHOMA STATE MEDICAL ASSOCIATION

VOLUME XXVII

McALESTER, OKLAHOMA, AUGUST, 1934.

NUMBER 8

GLEANINGS FROM A TOUR OF SOME FOREIGN SURGICAL CLINICS*

JOHN F. PARK, M.D., F.A.C.S.
McALESTER

During a visit to some European clinics, procedures of interest were observed which differed from the accepted procedures in the foremost clinics in America. In no sense is this a critical comparison. The surgical clinics were connected with the medical departments of the following universities and well may be taken as representing a cross section of surgical thought throughout Europe:

1. University of Paris.
2. University of Rome.
3. University of Milan.
4. University of Bern.
5. University of Zurich.
6. University of Vienna.
7. University of Prague.
8. University of Munich.
9. University of Frankfort.
10. University of Hamburg.

With few exceptions, all European surgeons are agreed that partial gastrectomy is the operation of choice in all types of chronic duodenal and gastric ulcer. Finsterer of Vienna, in 529 cases of duodenal ulcer did a gastric resection in 97.5 per cent, and a gastro-enterostomy in 2.5 per cent, advancing the following reasons for doing partial resection:

1. A large number of duodenal ulcers are complicated by multiple ulcers and chronic gastritis.
2. The incidence of gastro-jejunal

ulcers following gastro-enterostomy is very large.

3. The relief of symptoms following gastro-enterostomy is unsatisfactory.
4. The removal of the ulcer itself removes the danger of obstruction, hemorrhage, and perforation. The unfavorable irritation arising in the ulcer bed, muscle and angiospasm, as well as hypersecretion, are eliminated.
5. The total removal of the antrum excludes the region in which arises secretory and motor stimuli.
6. The free flow of the contents of the stomach is insured with the best possible avoidance of stagnation and irritation from its acid secretion.

It was emphasized that the gastric and duodenal lesions differ in Europe from those in America in that they are usually larger, multiple, more extensive, and often associated with extensive inflammatory changes in the mucosa. The incidence of multiple ulcers varied considerable among the different surgeons, Schmeiden of Frankfort demonstrating approximately thirty resected stomachs showing multiple duodenal and gastric ulcers with chronic gastritis, Clairmont of Zurich giving the incidence of combined duodenal and gastric ulcers as above 5 per cent and stating that about 75 per cent of duodenal ulcers are associated with some type of gastritis, while de

NOTE—Part of the above is from a paper by Dr. Charles Sturgeon, Los Angeles, read before some Pacific Coast organization. Dr. Sturgeon and I were members of the same party making this tour.

*Read before the Southeastern Medical Society, Talihina, Oklahoma, June 26, 1934.

Quervain of Bern said that he rarely found associated gastric lesions in duodenal ulcer. Sebening of Schmeiden's Clinic, reviewing 25,000 cases of partial gastrectomy, reports an incidence of only 0.7 per cent gastrojejunal ulcer, and claimed that the different European clinics show an incidence of between 10 and 40 per cent of gastrojejunal ulcers following gastro-enterostomy. Bastionelli of Rome resects the stomach in practically all duodenal and gastric ulcers, making the statement that gastrojejunal ulcer follows gastro-enterostomy in 20 per cent of cases in Italy and France.

For bleeding peptic ulcer, Finsterer of Vienna recommends partial gastrectomy, advocating prompt operation, while von Eiselsberg also of Vienna transfuses in bleeding ulcer and if the hemorrhage is not controlled then resects the stomach, but stated that only rarely was the hemorrhage not controlled by transfusion.

Allessandri of Rome determines the total acidity and free HCL after a Boas test meal, wine, and meal and wine, and finds that the wine and meal and wine tests give a higher reading than after the Boas meal.

The privilege of seeing von Eiselsberg, eighty years of age, hale and hearty, do two gastric resections one morning at the old Billroth Clinic, was appreciated. Here in the Billroth Clinic was done the first gastro-enterostomy and this clinic has always held a prominent place in gastrointestinal surgery. von Eiselsberg does not believe that gastric ulcers are often prone to malignant changes. In gastric hemorrhage from peptic ulcer, as stated before, he operates only if transfusion does not control the hemorrhage; and in perforation he resects the ulcer, repairs the site of perforation and then does a gastro-enterostomy. He resects the stomach in duodenal and gastric ulcers, if they do not respond to medical treatment, doing a Billroth No. 1 if the ulcer is small, and a Billroth No. 2 if the ulcer is large. Most surgeons, however, do a posterior Polya type of anastomosis although de Martel of Paris and Bastionella of Rome do a Billroth No. 2, and Finsterer does the Hoffmeister-Finsterer type.

GALL BLADDER

For removal of the gall bladder the Kocher incision was generally used, and the gall bladder removed from below upward after first isolating and ligating the

cystic duct and artery separately. Several cases of obstructive jaundice due to carcinoma of the head of the pancreas were observed and with few exceptions a cholecysto-gastrostomy was done. However, Allesandri always makes the anastomosis between the common duct and the stomach in cases of obstructive jaundice due to stricture of the common duct or carcinoma of the head of the pancreas, even when the gall bladder is normal. He prepares his jaundice patients with intravenous injections of urotropin and calcium chloride.

GOITRE

In the de Quervain Clinic, Bern, Switzerland, toxic adenoma of the thyroid is rarely seen, and only occasional is the hyperplastic type noted; the large adenomatous, non-toxic, type predominating. de Quervain, however, contends that toxic goitre is increasing each year. In the non-toxic adenomata, surgical intervention is done only in substernal goitre and those making pressure, never for the cosmetic effect. He uses local anesthesia, removes only part of one lobe, just enough to relieve pressure, and ligates the inferior thyroid artery before attacking the gland. The inferior thyroid artery in these cases is unusually large. The same type of goitre predominates in the Breitner Clinic, Vienna, and in the Schmeiden Clinic at Frankfurt, and only rarely is the toxic type observed. Jirasek, Prague, states that more and more patients with hyperplastic toxic goitre are seen each year, that they all come late for treatment, that they are usually in a very serious condition, and that as a result his operative mortality is 10 per cent. He attributes the increase in the number of toxic goitres to the taking of iodine. He has had a very low incidence of carcinoma of the thyroid, and this has also been the experience of Schmeiden. On the other hand, de Quervain reports an incidence of between 5 and 7 per cent of carcinoma in the adenomatous goitre. Schmeiden routinely ligates the first two super or thyroid arteries and then the two inferior thyroid arteries in cases of hyperplastic goitre. No further surgery is done in the majority of cases; however, if the patient does not sufficiently improve a subtotal resection is done. Sudek of Hamburg recommends total thyroidectomy in all patients having severe hyperthyroidism, in all cases of hyperthyroidism with cardiac damage, and in all cases of carcinoma of the thy-

roid. To all of these patients thyroid extract is given postoperatively.

GYNECOLOGY

In fibroid of the uterus, hysterectomy when done by the abdominal route was invariably done supravaginally, the only exception being Strassman of Berlin who routinely does a complete hysterectomy. His statistics show carcinoma develops in 5 per cent of the cervixes when left. The cervix is covered usually by peritoneum, but the round ligaments and the adnexal pedicles are but rarely sutured to the cervical stump.

Carcinoma of the cervix is treated with radium alone, or with surgery and radium, while a few advocate surgery alone if the case is at all operable. Superiority of radium over surgery is claimed by Doderlein of Munich, Seitz of Frankfort, Pestalozza of Rome, Walthard of Zurich, and Stockel of Berlin; Faure of Paris and Weinbel of Vienna recommend the Wertheim operation for carcinoma of the cervix. Adler of Berlin does a vaginal hysterectomy under local anesthesia, using one-fifth of one per cent tutocain, and scopolomine and morphine sulphate preoperatively. Immediately following operation he inserts 45 mg of radium, begins x-ray treatment at the end of two weeks, and radium again at the end of two months. He claims a 36 per cent five-year cures, which he attributes to the fact that he gets his cases early. In 600 cases of carcinoma of the cervix operated by the vaginal route his operative mortality was 3½ per cent. In his first 100 cases the operative mortality was 12½ per cent. He states that the abdominal Wertheim operation gives a 15 per cent mortality and 1 per cent urinary fistulae. If cystitis develops from the use of radium he keeps a permanent catheter in the bladder for eight days. For prolapse he does the Shauta-Wertheim (Watkins) interposition operation, and if the patient has not reached the menopause, he ties off the tubes.

ANESTHETICS

The anesthetic of choice in most clinics is ether through a closed mask with a rebreathing bag. Spinal anesthesia has its advocates, while others employ local anesthesia almost exclusively. Avertin is used in but few cases, and gas was used in only one clinic.

MISCELLANEOUS

Allessandri withdraws 10 cc. of spinal

fluid and after giving spinal anesthetic of tutocain, he injects the 10 cc. of spinal fluid into a vein in order to prevent headache and to decrease the incidence of urinary retention.

Cultures are taken from within the cervix of all patients admitted to the gynecological service of Walthard of Zurich, which are grown on the patient's own serum for twenty-four hours. If the culture is positive, the patient is kept in bed for ten days before operation in order to let the organism die out, which he claims it will do if the patient does not have sexual intercourse. In gonorrhea he keeps the patient in bed for six weeks, and reports that with this treatment alone the gonococcus will die out. In his clinic, obstetrical cases are permitted out of bed for ten minutes on the fourth day.

Pestalozza (Rome) believes that the practice of birth control causes fibrosis of the uterus. On his service one out of ten admissions is for ectopic gestation which he attributes to gonorrhea, and states that 90 per cent of all women admitted to his service have this type of infection.

Strassman (Berlin) scrubs his hands for ten minutes, washes in sterile water for five minutes, and then dusts his hands with dry boric acid powder; he also places boric acid powder in the fat layer of the abdomen after the fascia has been closed in suppurative cases, claiming that it lessens infection and postoperative cystitis. For drainage he uses ostrich feather and pigeon feather quills with wicks. He does not routinely remove the appendix when doing a hysterectomy, believing that it increases the operative mortality; in fact, in no clinic was incidental appendectomy observed.

Pestalozza x-rays pregnant women at the seventh month, at which time the soft tissues show on the plate, and he determines the sex by the presence or absence of the scrotal shadow.

Sauerbuck of Berlin reported nine successful cases of anastomosis between the stomach and the esophagus in cases of low organic stricture of the esophagus. He opens the chest posteriorly, brings the cardia up through an opening in the diaphragm into the pleural cavity and performs anastomosis above the stricture. Two cases which he demonstrated were able to swallow with ease.

In cases of non-union of bone Schmeid-

en withdraws 25 cc. of the patient's blood and injects it between the fragments and the ends of the bone to stimulate callus formation. This repeated every two weeks.

In one clinic in Rome they were filling the bone cavity in osteomyelitis with a mixture of plaster of paris and idoform. The results were not too brilliant.

Many beautiful pathologic specimens were observed in the museum of Professor Brindeau, Paris, the specimens retaining their natural colors. This result is obtained by placing the specimen in Kaiserlein's solution for ten days when the tissue becomes white in color. It is changed on the tenth or eleventh day into new Kaiserlein's solution and the specimen takes on its natural colors.

At the Pasteur Institute a 20-year-old culture of tubercule bacillus on bile media is changed daily and from this preparation, "BCG" tuberculum is made for the prophylactic use in the newborn. This is supplied free on telegraphic request throughout France.

The Radium Institute of Paris, with

Mme. Curie at the head, is supported by the Pasteur Institute. Here they have thirteen grams of radium and carry on a great deal of research in addition to the clinical work. This clinical work consists of about 600 cases a year, being largely confined to superficial lesions, i.e., carcinoma of the skin, tongue, cervix, etc. When radium is used about the jaws the teeth are never pulled for five or more years after the radium is used because of a severe necrosis of bone which develops if extractions are made before that time. They have found that only 20 per cent of enlarged glands associated with carcinoma of the lip are malignant, but that 80 per cent of enlarged glands associated with carcinoma of the tongue are due to extension of the growth. In carcinoma of the lip, if the case is to leave Paris and not be under their supervision, operation is performed. If the patient is to remain in Paris they depend entirely on radium and do not operate. An attempt is made to re-examine all cases each year on the anniversary of the day of treatment.

NON-SURGICAL MANAGEMENT OF BENIGN PROSTATIC HYPERTROPHY

S. F. WILDMAN, M.D.
OKLAHOMA CITY

More than a century ago Sir Benjamin Brodie wrote the following: "When the hair begins to turn gray, when about the periphery of the cornea there appears an opacity, when the arterial tree begins to show sclerosis, frequently, I would say almost invariably, the prostate increases in size." Most authorities contend hypertrophy of the prostate occurs in 34 to 40 per cent of men above the age of fifty.

Urologists as a rule avoid discussing this subject with their patients, and likewise have done little or nothing to prevent this troublesome affection.

Today, although public health promotion and social hygiene propaganda have brought public attention to subjects that have been formerly taboo—reticence and ignorance continue to shroud the topic of

male anatomy, and men are woefully uneducated on the subject of prostatic disease.

The prostate is a sexual organ, partly glandular and partly muscular. Normally it is about the size and shape of a horse chesnut, smooth and firm in consistency. Because of its location at the neck of the bladder and intimate relation to the urethra it is particularly exposed to bacterial invasion.

There are two physiological functions which this gland performs: First, it assists in opening and closing the urinary bladder, and second, it secretes the fluid essential for virility and fertility. Because this secretion is a most favorable medium for bacterial growth, the gland often becomes the site of persistent low

grade infection. Indeed, the prostate is the vulnerable spot of the male anatomy.

Ciechanowaski, in 100 cases, reported a most exhaustive study on a large number of hypertrophied prostates with the resultant conclusions that benign prostatic enlargement is an inflammatory process; that the inflammation has extended from posterior urethra and was probably preceded by a urethritis. This inflammatory process within the gland results in scar tissue formation around the excretory ducts by blocking off the elimination of prostatic secretions, causing cystic dilation of the gland and ultimately results in an enlargement of one or more lobes.

Green and Brooks carefully studied fifty cases of hypertrophied prostates and were fully convinced that hypertrophy was inflammatory in origin in every case. They demonstrated inflammatory exudations of interstitial hyperplasia of sufficient degree to fully account for the enlargement.

There is much divergence of opinion as to the interpretation of the term inflammation. Inflammation is the local tissue reaction to irritant—no matter how mild.

It has been argued from the clinical standpoint that the urethra and prostate are not inflamed unless pus is present. This view is not correct. Regardless of whether or not there is always infection with inflammation, the treatment is invariably the same.

Assuming that some toxic agent—bacterial bio-chemical or otherwise within the prostatic scini gradually causes changes which lead to enlargement, urological literature was reviewed to determine if such an opinion was tenable.

There was found a very definite consensus of opinion that the existence of irritating intra-prostatic substance is the likely cause of prostatic enlargement and the pathological findings are those of hyperplasia.

The remote thought to cause or contribute to this hypertrophy is previous inflammatory processes, prolonged ungratified sexual desire, protracted habit of withdrawal, constipation, sedentary habits, exposed to cold or truma.

The consistency of the gland is directly proportional to the amount of glandular or stromatous hyperplasia—soft if glandular hyperplasia preponderates, but if firm stromatous hyperplasia is more

prominent. The consistency of the benign hypertrophied prostate is slightly firmer than that of the normal gland—moderately soft, never the stony-like hardness of the malignant prostate. From the clinical standpoint the value of massage rests largely on whether the obstructive lesions are benign hyperplasia or neoplasia.

When a patient over fifty years of age complains of frequency, nocturia and dribbling, suspicion at once falls on the prostate. As the first step in the examination a digital exploration through the rectum should be made. The purpose of this exploration is to obtain not only the usual information as to size, shape and consistency of the gland, but more specifically to determine if the tissue beneath the deepest part of the urethra presents a groove significant of lateral lobe hypertrophy or an elevation significant of median lobe enlargement.

If, in place of the soft chesnut-like body which is hardly recognized except by the skilled touch, the finger encounters a rounded, dense mass, moderately soft in consistency, there is benign hypertrophy of the prostate; if it is large and soft, there is a preponderance of the glandular hyperplasia; if it is small and firm, the connective tissue predominates.

Cystoscopic and cysto-urethroscopic examination should be done to determine if a bar, stone or contracted bladder neck is present, or if there is a bulging of the prostate in the bladder.

The differential diagnosis of the benign hypertrophy from that of carcinoma is of great importance. Cunningham, in the 1933 Year Book Series, reports 20 per cent of 222 cases of hypertrophied prostate were malignant.

Benign hypertrophy is elastic in consistency and regular in outline; malignant hypertrophy is stony and hard in consistency and irregular in outline.

The non-surgical treatment of hypertrophy is massage. We believe massage, following the stage of acute congestion, will prevent hypertrophy. The effect massage will have on the gland already hypertrophied depends entirely on the amount of scar tissue formation.

Massage increases the flow of blood through the gland promoting the removal of toxins and cellular debris and it also empties the pus pockets if any are pres-

ent, thus relieving the engorged lymphatics and blood vessels of the stroma.

Through massage the amount of secretion is lessened, the edematous feel of the gland changes to normal consistency, sensitiveness decreases, the frequency and difficulty in voiding is lessened and oftentimes the residual urine disappears.

The prostate should be massaged about once a week—or as often as required to allay urinary symptoms and reduce the inflammation and edema. The amount of pressure exerted by the massaging finger varies according to the sensitiveness of the gland.

It is very necessary to pay close attention to the median lobe as this is the area of most constant involvement—usually the most sensitive area and that which requires most treatment.

Errors may be made in attempting to prevent hypertrophy that already exists, and the patient therefore misled. Hypertrophy can only be prevented in the stage of acute congestion before scar tissue has been formed.

Carcinoma, tuberculosis and calculus of

the prostate should not be treated by massage.

I do not wish to impress you with the idea that every enlarged prostate can be managed non-operatively, nor that a large prostate can be reduced to nothing. It is, however, my opinion that many prostates which are being treated surgically would yield equally good or better results by this conservative treatment. A large prostate that will not reduce and continues to cause marked residual urine, should, if other conditions warrant, be removed.

CONCLUSION

1. The prostate is highly susceptible to infection and benign hypertrophy is caused by a local intra-prostatic irritant.

2. Benign hypertrophy may be prevented by early massage at regular intervals.

3. Many prostates removed surgically could have been satisfactorily treated by non-surgical methods.

4. All men past the age of fifty are potential prostatics. I urge all men past fifty to have a careful prostatic examination twice a year.

THE CLINICAL COURSE OF URETERAL ANOMALIES

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Various degrees of duplication of the ureters and kidney pelvis constitute a rather common anomaly of the upper urinary tract. It is said to occur in approximately two or three per cent of all individuals. It probably is present more times than we are aware as it often gives no outward sign of its existence. However, it commands our interest in being a basic factor in the development of pathological states—the most important that of chronic infection.

For reasons not thoroughly understood, malformations of organs predispose them to disease. Possibly the faulty form is only a visible manifestation of concomitant anomaly of structure having to do with the function of the organ. As a properly functioning urinary tract rarely becomes seriously diseased, developmental

defects affecting physiology certainly must accompany anatomical deformities.

When one considers the complex embryonic growth of the genito-urinary tract it seems amazing that more individuals do not present gross deformities. The two systems not only rise from mutual embryonic sources but are intimately related in their fetal growth. The ureter develops from the posterior wall of the Wolffian duct through a process of budding. As it grows there is a fusion of its distal end with the primitive kidney tissue to form the complete kidney and renal tract. That portion tracing its origin from the Wolffian duct becomes the collecting part of the kidney, i. e., ureter, pelvis, calices and collecting tubules, and that which is derived from the primitive kidney tissue becomes the glomeruli and convoluted tub-

ules. As the urorectal septum divides the cloaca into the rectum and bladder there occurs an anterior shift of the Wolffian duct and ureter away from the rectum. At first discharging their contents into the primitive bladder and urogenital sinus by means of a common orifice, as development proceeds, they separate and come to open into these structures by individual orifices. In the male the Wolffian duct becomes the vas deferens, seminal vesicles and ejaculatory duct, but in the case of the female it atrophies and a separately developed structure, called the Mullerian duct, which rises probably from the Wolffian duct, becomes the tubes, uterus, vagina and vaginal vestibule. It may be observed that the bladder proper, originally a portion of the cloaca, is of entodermal origin while the ureter and trigone from the Wolffian duct are mesodermal.

It may be readily seen that the possibilities for renal and ureteral anomalies are many and varied. There may be a splitting of the uretral bud to form multiple ureters and pelves which, fusing with different portions of nephrogenic tissue, result in multiple kidneys. Reduplication may range from a simple bifid pelvis on one side to complete bilateral reduplication on both sides of the body. There may be a fusion of the two ureters anywhere along their course and they may have one or more orifices opening within or without the bladder. They may be enclosed in a common sheath or may have individual sheaths. Duplication of the pelvis, as a rule transverse in its place of separation, can be perpendicular with one pelvis in front of its fellow. The upper pelvis is usually the smaller and more poorly formed than the normal. With complete duplication the lowermost orifice is usually associated with the upper pelvis.

The rectum or even the intestinal tract may be a site for ectopic orifices. They may open anywhere on the trigone or the floor of the posterior urethra as far forward as the sphincter. When searching for them it is useless to look anywhere except in the trigonal region or on the floor of the urethra—never on the roof. The male may have openings anywhere along the genital tract, the ejaculatory duct, seminal vesicles or vas deferens, and in the case of the female, one can expect to find them in the vaginal vestibule, vagina, cervix, uterus or even in the tubes.

In the vestibule they usually lie a bit below and lateral to the external meatus and may give the erroneous complaint of bladder incontinence because of the constant dribbling.

The kidney pelvis and ureter is a highly specialized bit of mechanism, depending a great deal on an efficient neuromuscular make-up in order to properly propel fluid downward. Therefore, it is not the faulty development in form that interests us so much as the fact that the same etiologic factor responsible for anatomical changes may have affected the functional components of the renal tract. Because of this we have the production of mild urinary stasis which may be continuous or intermittent, of a spastic or atonic type, and may give rise to symptoms in the form of painful reflex peripheral stimuli. Infection tends to supervene, stones form, strictures develop and hydronephroses of undetermined origin manifest themselves more frequently than were the case if these structures normally developed. It is also an impression gained from clinical experience that in those cases presenting unilateral anomaly, dysfunction producing pathology may be present even in the supposedly normal side.

The symptoms arising from anomalous development of the ureter or pelvis usually date from the onset of pathological states; the most common is chronic infection. However, if careful inquiry is made in a number of cases one will be able to get a history of ill-defined aches or pains in the back or lower abdomen. Sometimes attacks of bladder frequency or urgency may be complained of. As infection supervenes these symptoms become pronounced and medical advice may be sought because of frequent attacks of renal colic or pyelonephritis.

The diagnosis of anomalies has been greatly facilitated by the use of intravenous methods of delineating the urinary tract. Retrograde pyelography, because of inadequate filling, would frequently miss the condition entirely. In double ureters only the one ureter traversed by the catheter would fill and in the case of double pelvis the catheter entering usually the top pelvis would fail to fill the lower unless injection is made on withdrawal. Hence, in the absence of intravenous urography it is rather important to make pyeloureterograms.

Anomalies play an important part in

the urological conditions of children. With them a preliminary intravenous urogram should always be made before cystoscopy. This often will give the clue to the diagnosis, if not the complete x-ray diagnosis in itself, and make retrograde injection unnecessary. Uroselectan, as a rule, reveals pelvic duplication more satisfactorily than the cystoscopic method, but because of indefiniteness of outline of the ureter one may miss ureteral duplication entirely. In a routine pyelogram one may suspect pelvic duplication if the injected pelvis is rather highly placed and small, and has a poorly developed contour. With these it is wise to check the x-ray plates with an intravenous injection of uroselectan.

When double ureters are encountered, one should catheterize them separately, do a functional test and examine the individual specimen of urine obtained for the amount of infection present in each pelvis.

In most instances treatment resolves itself in the medical or surgical care of the superimposed pathology. When functional disturbances accompanied with pain or other distressing reflex symptoms are present and no apparent obstruction or infection can be demonstrated, the use of atropine in adequate dosages may give a considerable amount of relief. It may

be given in much the same manner as is used in the treatment of children for pylorospasm. At times even when no obstruction can be proven to be present, the passage of a large caliber catheter has been found to exercise almost a magical influence in relieving symptoms. Whether this is due to the dilatation of large caliber strictures or a massaging action on localized spastic areas in the muscularis cannot be determined. Empirically, it is a satisfactory procedure in a goodly percentage of cases.

These individuals should be carefully watched for the onset of infection and when it occurs vigorous attempts should be made to eradicate. Foci of infection searched for and removed, general health improved, urinary antiseptics, pelvic lavage, ketogenic diet, all may be necessary in order to do so. One should be content with nothing less than a completely sterile urine before discharging these patients as cured. Pus may disappear under treatment but bacilluria persist and recurrences are probable. Because of the destructive influence chronic infections have on the tissues, motility is further hampered and serious renal damage results. For this reason the presence of an anomaly of the pelvis or ureter signifies that the afflicted individual is a potential candidate for serious kidney pathology.

VESICULAR ERUPTIONS OF THE HANDS AND FEET

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Of the more common dermatoses encountered in a dermatological practice, the various types of vesicular eruptions occurring on the hands and feet comprise a very high percentage of the cases presenting themselves for diagnosis and treatment. This is not only true to the dermatologist, but equaled in frequency to those doing general work as well as internist, and even to those doing surgery and especially to those who do considerable industrial surgery. It is my purpose to review briefly the most common vesicular eruptions occurring on the hands and feet, with especial reference to the proper

recognition in order to avoid untoward reactions from misdirected treatment.

The fads and fashions of medicine enjoy their respective enthusiasm, as do all other fashions, but time soon relegates them to their proper places, and in so doing material gain results, yet over-enthusiasm, in many instances, results in appreciable harm at times. For the past number of years, especially since Mouktar¹ called to the attention of the medical profession that many of the dysidrotic eruptions on the hands and feet were mycotic in origin, there has been a vast amount of literature

accumulated supporting his view, but during the height of this enthusiasm we have lost sight that not all vesicular eruptions occurring on the hands and feet are mycotic in origin. Recently Mitchell² called our attention to a series of twelve cases which resembled a mycotic infection clinically, but no demonstrable fungus either by culture or direct examination. Lehman³ more recently reminded us that the etiological factor, exclusive of fungus infections in these vesicular eruptions, may be varied. He presented cases to show that they may be toxic, dietary, nervousness, dissipation, and constitutional. Quoting Finnerud's⁴ discussion of "Dermatoses, Palms and Sole," he says: "There is too great a tendency on the part of the dermatologist to consider vesicular or pustular eruptions, largely limited to the palms and soles, as ringworm. Such a diagnosis should never be made without demonstration of the fungi from the lesion on the foot—a procedure which requires but a few minutes." To this I heartily agree. The prevalence of mycotic infections and the accompanying commercialization of numerous drug houses, with their specific fungus cures, has, in my opinion, been responsible for many untoward results.

Excluding the rather unusual dermatoses of a vesicular character occurring on the hands and feet, the most common vesicular eruptions are, namely: mycotic, dysidrotic, various types of acute and chronic dermatitis, either external or constitutional. The mycotic eruptions occur in other forms than just the vesicular, but our concern here is the vesicular type. The infection is predominantly due to the epidermophyton, trichophyton, or the oidium, a yeast-like fungus. Of course there are others, but, for all practical purposes, these are the most frequent offenders. The first visible sign of this eruption is usually on the toes or on the inner surface of one or both feet, most often associated with some maceration between the toes, especially the little and fourth toe. The vesicles are intensely pruritic and usually localized to a small area at first, spreading rather rapidly to adjacent areas. In the majority of instances, at its beginning it is unilateral, thereby differing from dysidrotic eruptions, since these, in most all instances, are symmetrical either on the palms and soles together, or singularly. The primary lesions are often encountered on the hands first and their general appearance is the same. In addition to the

primary phytotic eruptions occurring on the hands and feet we see quite frequently a secondary eruption which is known as the phytids. These are thought to be the resultant factor of toxic absorption of the fungus or an actual expression on the skin by transference of the fungus by the blood stream to other parts from an original infection. These eruptions are most often symmetrical on the hands, but, occurring elsewhere on the body, the symmetry leads one to believe that the toxic substances are responsible rather than the fungus itself. If there is any question of diagnosis as to whether one is dealing with a fungus infection, this can, in a large percentage of the cases, be settled with little effort on the part of the physician by clipping the tops of several vesicles, then placing them on a slide with the cut surface up, adding a few drops of 20 per cent K.O.H. preparation. In a few minutes one will find the spores, or the branching forms of the fungus. In doubtful cases, if time permits, which it usually does not in private practice, culturing the fungus on suitable media will, in the course of several weeks, show the offending organism. The use of the newer substances, like trichophytin and oidiomycin, are not diagnostic of a fungus infection. Many skins will give a positive test in absence of any infection.

Dysidrosis, or pompholyx, in my opinion, still should be considered a disease entity. In this eruption the onset is usually sudden, often occurring over night and being symmetrical. The lesions are deep-seated vesicles, preceded or accompanied by burning or stinging sensations rather than itching. As a rule, they are found on the palms and palmar surfaces and between the fingers; also on the plantar surfaces of the feet. The causes vary, as pointed out previously; they may be toxic or intestinal, especially, as Engman⁵ states: "The removal of all protein from the diet certainly benefits these cases." Nervousness and dissipation play a very important part in the causation of this disease.

Eczema occurring on the hands and feet of a vesicular type usually does not present much difficulty in diagnosis, yet the etiological factor may tax one's best efforts. The erythematous vesicular eczema is encountered frequently and very often treated for a mycotic infection with exacerbation of the process. The various occupational and contact dermatitis are, for

all practical purposes, similar in appearance. The usual erythematous, exudative, vesico-papular, and pustular type eruption, with the secondary lesions of fissuring and crusting along with the history of an irritating substance, will lead one to suspect an external irritant. Patch testing these cases, one will find the offending agent, in a large percentage of cases. The eczemas of metabolic origin, as a rule, do not limit their manifestations to the hands and feet. In the course of time there will be eczematous lesions elsewhere on the body.

During the past few months I have had the experience of treating a number of these cases, which were treated for ringworm and in which no demonstrable fungus could be found. In all instances the eruption has been made worse by the various applications of irritating drugs, either on the patients' own account or having been prescribed by their physician.

REPORT OF CASES

Case No. 1: Mr. E. F., male, white, age 51 years, physician. Eruption first appeared on hands March 8, 1934. Thought it to be ringworm and applied kerolysin for several days. Noticed the eruption decidedly worse after the second day's application. At the onset there was burning and stinging which appeared rather suddenly. He had a similar attack one year ago. Examination revealed an acute erythematous vesicular eruption on both palms, interdigital spaces, and extending on the dorsum of both hands. On both palms there were deep-seated vesicles without evidence of inflammatory reaction. Diagnosis: Recurrent pompholyx.

Case No. 2: J. E., white, adult male, age 28 years, truck driver, single. Complained of an eruption which started on both great toes January 24, 1934. No previous skin trouble. He thought he had a ringworm infection and went to the drug store and purchased a bottle of "one shot cure". He applied this daily until the 29th. About the second day after the onset he noticed a vesicular eruption on both hands. Examination showed an acute vesico-bulbous erythematous eruption on the toes of both feet, plantar surfaces, and similar less inflammatory lesions of the palms. On the right foot there was, in addition to the primary lesion, a secondary pyogenic process which was manifested by pustulation and lymphangitis. He was hospitalized and repeated smears and cultures were made for fungi but none were

recovered. Both the trichophytin and oidiomycin test gave normal reactions. He was placed on an animal-free protein diet and hot aluminum acetate packs. Under this regime the lesions cleared rapidly. No additional preparations were used. After being in the hospital he admitted that he drank large amounts of beer, since he had access to it, and also used hard liquors in fairly large amounts. He also stated that he would notice blisters on the hands after a debauch. The etiological factor in this case is unquestionably dissipation.

Case No. 3: B. P., white, adult male, age 47 years, married, salesman. First seen March 10, 1934, for an eruption on the palms and flexor surfaces of both elbows which had been present for several months. Several days ago he applied several anti-fungicidals because he thought it was a fungus infection. Immediately afterward he noticed that there was an exacerbation of the eruption. Examination revealed an acute erythematous vesicular dermatitis of both palms, distributed to the areas of application. In addition, he also had an erythematous scaly dermatitis on the flexor surfaces of both elbows. There was a definite history of allergy, being sensitive to ragweed and on skin testing he gave a positive four plus reaction to tomatoes. The primary eruption in this case was a dermatitis due to tomato. Smears and skin testing for fungi were negative.

Case No. 4: J. M. A., age 48, married, beer salesman. First noticed an eruption on the right finger of the right hand which appeared several days after a minor injury. The eruption disappeared in a few days with the application of mercurochrome. About February 6th he noticed an itching vesicular eruption appearing on the same finger. He consulted a physician who diagnosed the eruption as a fungus infection and prescribed kerolysin. He used this for several days but noticed the eruption spreading over the fingers and upon the dorsum of the hand, and also noticed intense burning after each application. On the 10th he noticed a red streak going up the arm and became alarmed. Examination, at this time, showed an acute erythematous, vesico-bulbous and pustular process which involved the entire dorsum of the right hand, extending upon the wrist, all the fingers, and the palm of the hand. There was considerable swelling with a definite

lymphangitis up the arm to the axilla. No fungi could be demonstrated. Under daily injections of staphlo-coccus toxoid and hot aluminum acetate packs, the eruption cleared in ten days.

Case No. 5: O. K., age 25 years, single, filling station operator, white male. He stated that he had an eruption for about six weeks on both hands, being first noticed after using a cleansing powder on the driveway. He was treated by the company's physician and told he had a fungus infection. A preparation of salicylic acid and benzoic acid were prescribed, but the hands became more acutely inflamed after using this prescription. Examination revealed a gauntlet type acute erythematous vesicular eruption with some scaling involving the dorsum of both hands and all fingers, being less on the palmar surfaces. This is a case of dermatitis due to external irritant, an occupational dermatitis.

Case No. 6: T. G., age 42 years, oil field worker. The patient had been hospitalized for several months on account of an accident to the right foot which resulted in a slow healing ulcer in the plantar surfaces of the right foot. He developed an acute vesicular eruption on both feet and hands on December 26, 1933. Kerolysin had been applied for two days when first seen. The primary eruption was a deep-

seated vesicular process on both hands and feet, chiefly the plantar surface of both feet. In addition to the primary eruption there was a secondary erythematous vesicular dermatitis on both hands and feet. Under local applications of hot aluminum acetate, the eruption cleared readily. Smears for fungi were repeatedly negative. Trichophytin and oidiomycin intradermal skin tests were negative. The eruption in this case was the result of a toxic absorption from a slow granulating ulcer which was present on the right foot.

A proper diagnosis is most essential for the successful management of any dermatoses.

These six cases are illustrative that all vesicular eruptions occurring on the hands and feet are not mycotic in origin. The untoward complications, such as acute dermatitis and pyogenic infections, do occur from the injudicious use of various fungicidal preparations in lesions occurring on the hands and feet which are not mycotic in origin.

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TREATMENT OF URINARY TRACT INFECTIONS

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In presenting suggestions for the treatment of infections of the urinary tract, it is essential that we should remember that urinary infections are frequently concomitant with other urologic conditions, such as obstructions, calculi, tumors, etc. Obviously, after the acute symptoms have been relieved, the early management of such cases should be to identify and remove these pathological conditions. My subject today will be confined to a method of attack on the actual infection, including cases which have proved resistant to other methods of treatment in the past.

The literature on the treatment of in-

fections of the urinary tract reveals treatments of so great variety as to support the probability that few, if any, of the drugs so glowingly extolled in advertisements and circular letters are effective. With the inventive genius of the modern chemist available to the many drug houses throughout the land, it is now possible for the general practitioner, as well as the urologist, who is seeking some relief for a patient with urinary tract disturbances, to successfully color the urine almost any shade in the spectrum. Could we completely discount the patient's own recuperative powers, we would probably find the

results of the drugs administered, aside from the staining of the underwear, were largely psychic.

In infections of the urinary tract, other than those due to gonococci or tubercle bacilli, statistics from many different sources show that by far the greatest percentage of infecting organisms come under the colon group. The staphylococci come next on the list of greatest offenders causing urinary sepsis, with streptococci and a number of gram-negative bacilli, such as *B. Pyocyaneus* and *B. Proteus* and organisms of the paratyphoid group making up only a small minority of the cases.

To again return to statistics. In numerous reports within the last two years it has been shown that the percentage of satisfactory results obtained by therapeutic measures, other than where the ketogenic treatment was used, was approximately 15 per cent. In other words, 85 per cent of the patients must be placed in the columns, "unsatisfactory results," or "condition improved". Patients classified in these last two columns have no assurance that their relief will be anything but temporary. In employing the ketogenic diet in the treatment of the bacillary infections and neo-arsphenamine in conjunction with methamine and some acidifying agent such as ammonium-chloride in the coccic infections, it is now possible to raise the percentage of cases placed in the "satisfactory" column to between 60 per cent and 70 per cent.

How shall we proceed when patients present themselves with a history of one or more attacks of urinary distress, with symptoms of burning on urination, frequency of urination, urgency, tenesmus, pyuria, and hematuria, and in some cases with systemic attacks including chills and fever and pain in the region of the kidney?

Our diagnosis should, first, include a visual examination of the urine; in the male, the two-glass test is important, and in the female a catheterized specimen of the urine is essential and may be considered analogous to the second glass of urine in the male. In the great majority of cases, such specimens will be hazy and will not clear with the addition of acetic acid. A microscopic examination of the sediment should first be made by placing a few drops on the slide over which a cover glass is placed; examination is made with the

"high dry" lens of the microscope. In addition to estimates of the amount of pus present, often the organisms can be seen in this unstained preparation. The cover glass should then be removed and the specimen dried and fixed by heating, after which a gram-stain is applied; the slide is then examined under the oil immersion lens of the microscope. In almost every case presenting the symptoms just described, one, or at most, two examinations will reveal the invading organisms. In the few cases where the type of infecting organism is not disclosed by microscopic examination, it may be necessary to culture the urine. These cultures are made on Endo's medium for bacilli and in glucose-brain-broth or blood agar for cocci. When the microscopic examination reveals a pyuria with none of the more common infecting organisms present, one must be certain to rule out the possibility of a tuberculous infection.

With the information as to the type of infecting organism, we are ready to proceed with treatment.

ACUTE BACILLARY INFECTIONS

In the acute cases, without severe systemic manifestations, acidification of the urine is of paramount importance. This is most readily accomplished by the administration of large doses of ammonium chloride, either in an aqueous solution or in the form of half-gram pills. Six grams daily in divided doses may be given with safety. Where the infection is accompanied by a marked gastro-intestinal upset and with fever, it may be advisable to give 60 grains of methenamine (which is provided in sterile ampules) intravenously to allay the systemic attack. At times calcium-chloride intravenously may be used to acidify the urine. This, however, is not given with the methenamine. In severe cases with considerable fever, ten cc.s of a 1 per cent solution of mercuriochrome in 500 cc. of normal saline given intravenously will frequently institute a chill followed by some additional temperature rise and then a drop to normal temperature. This accomplished, the ammonium chloride orally should be commenced when the gastro-intestinal condition will permit.

CHRONIC BACILLARY INFECTIONS

With acute symptoms relieved a more vigorous attack on the invading organism may be started. We know, from the work of William Mansfield Clark, that it is

practically impossible sufficiently to acidify the urine and thereby completely inhibit the growth of the bacilli.

Some patients will be entirely freed of the organism by the addition of methenamine to the therapeutic measures already taken to acidify the urine. In many instances, the ketogenic treatment of bacilluria will be a real addition to your armamentarium. While on the staff of the Mayo Clinic, I first introduced this treatment, two and one-half years ago, and since then my results have been confirmed in numerous medical centers. In the past because of the complicated diet involved, it has almost of necessity been a hospital procedure. However, in the last few months with the aid of Dr. Bert K. Keltz, the dietary part of the treatment has been so simplified as to now be available for office patients. Together we will present this simplified treatment in the near future.

So frequently are coccic infections present with those of the bacillary type that both must be treated simultaneously.

COCCIC INFECTIONS

In treating the acute coccic type of urinary sepsis measures described for the acute bacillary infections should be used. In addition .3 gm. to .45 gm. of neoarsphenamine intravenously every five days should be given. The neoarsphenamine is particularly useful where the infecting organism is a staphylococcus or a streptococcus fecalis. When the infecting organism is a streptococcus other than the streptococcus fecalis, the results as a rule are not satisfactory. In the chronic coccic infections neoarsphenamine given intravenously every five to seven days for four or five doses is of value. This should be accompanied by the administration of methenamine and some acidifying agent. It should be remembered that a chemical cystitis or trigonitis may result if the dosage of the methenamine is excessive.

In the experience of some observers, bacteriophage has been successful in combating infections of the urinary tract. Certainly, to be effective, this necessitates a specific phage for each particular organism, which makes it an expensive and impractical procedure. In the cases where I have tried this therapeutic measure, the improvement, if any, has been slight and convinces one that the results do not justify the means.

I do want to emphasize that in treating

urinary tract infections in the male, regular prostatic massage to eliminate the prostate as the possible re-infecting focus, is most essential.

To illustrate this point, I should like to cite an interesting case of the last few months. A druggist from a rather distant city in Oklahoma came with a history of urinary tract infection during the last five years. The infecting organism was the colon bacillus; in the two-glass test, both glasses of urine were hazy. As is usual in this type of case, there was a prostaticitis IV graded on a basis of I to IV. Previously he had had a course of prostatic massage with some improvement of the prostaticitis. However, during a rest period following the prostatic treatments the infection in the prostate had increased. I convinced the patient he should come to Oklahoma City for a period of two weeks. He was placed on the ketogenic diet and in addition received bladder irrigations daily with a 1:8000 solution of potassium permanganate and a gentle prostatic massage every other day. At the end of ten days the urine was clear and microscopically there was no evidence of any infecting organisms. There was, however, a prostaticitis Grade III to IV. On his return home he was instructed to have a gentle prostatic massage and a bladder irrigation every third day. The urine remained free from infection for one month, at the end of which time there was a slight exacerbation of his symptoms and both glasses of urine, in the two-glass test, were slightly hazy. Again he took a course of the ketogenic diet, at the same time continuing the prostatic treatments. In ten days both glasses of urine were clear and microscopically negative. He continued the prostatic massage for one month and then reported for a check-up of his condition. The urine was negative and he had a prostaticitis Grade I. A letter from him six weeks later reported that he was entirely free from any symptoms.

This instance is cited to show the necessity for reducing the infection in both the bladder urine and the prostate at the same time. Undoubtedly, one acts as a source of infection to the other and together they make a vicious circle which is increasingly difficult to break as changes take place in the prostate due to the long-standing infection.

In summing up, let me say that while it is true that we have no specific therapy

for genito-urinary infections, we do have at our disposal a number of therapeutic measures and methods which make it pos-

sible for us now to be of greater service to those suffering from such an affliction than at any time in the past.

THE MANAGEMENT OF VARICOSE ECZEMA AND ULCERS*

WILLIAM E. EASTLAND, M.D.
OKLAHOMA CITY

In discussing a subject that is as time-worn as this, I am keenly conscious of retreading ground that has been well and many times covered. Because, however, of this constant physical menace afflicting a fair number of people, it behooves us as physicians to stimulate ourselves to repeated studies in the hope that some good may be derived therefrom.

As the term "varicose ulcers and eczema" implies, these conditions are dependent upon varicosities of the veins of variable degree. As in all medicine, prevention is superior to active treatment, therefore, if possible, it would be preferable to control those factors producing varicose veins. The underlying causes have been attributed to interference with the return venous flow, e. g., garters long periods of standing on the feet, pregnancy and pelvic tumors. In a series of 354 reported cases by Jensen¹, of the New York Hospital, 56 per cent of the patients could trace their varicosities to some member of the family. Smith², of the Mayo Clinic, has listed the etiology of a survey of 847 cases in sequence as follows: (1) pregnancy; (2) occupation; (3) injury; (4) febrile disease with secondary phlebitis, and (5) inheritance.

The mechanics or physical conditions pending in varices make an interesting study. McPheeters³ and collaborators pointed out that the flow of blood through varicose veins is slowed or stagnant; moreover, when the patient is walking "the flow is actually reversed". Jensen¹ has stated that the return flow of blood is stopped due to the communicating veins between the superficial and deep system being impaired by virtue of the common femoral vein allowing blood to flow into

the deep saphenous vein. As a result of this disturbed mechanism producing an impaired circulation, stagnation ensues causing an impaired nutrition and a site of lowered resistance, thereby favoring the development of eczematoid skin changes. In case of a minor injury or a blood stream infection, ulceration may occur.

Just how severe either of the above conditions may be, is determined largely by the degree of varicosity and the stagnation resultant therefrom; the patient's general defensive mechanism is to be considered, also. In patients displaying eczema of the legs in which it is attributed to mild varices, it is at times possible to obtain satisfactory clinical results by the application of suitable local applications and bandaging. Locally, the application of an ointment containing equal parts of 1.5 per cent coal tar distillate in a suitable base (taroxide number 1), and Lassar's paste in which 1 per cent phenol has been incorporated, serves admirably. Such an application may be applied once or twice daily and then covered with an ace bandage. The use of an elastoplast bandage is in some cases preferable, e. g., in patients who are not able to apply ace bandages properly. The elastoplast maintains an equal pressure for one to two weeks without changing.

It is claimed by some workers that by tight bandaging over a sufficient period of time, small caliber varices can be overcome. Clinically, there is reason to believe this statement because of cures obtained in many cases of eczema and ulcers. In a report by Jones, of Ohio, excellent results were obtained by local antiseptics and elastic stockings as determined by a practice of over fifty years' duration.

Although it is sometimes possible to ob-

*Read before Annual Meeting Oklahoma State Medical Association, Tulsa, May 21, 22, 23, 1934.

tain permanent cures in leg ulcer or eczema cases in which large varicose veins are present, it has been repeatedly seen that such conditions are prone to recur when the above-mentioned procedures are employed. Since such great improvement in results obtained by injecting varicose veins has been accomplished in the last six years, it is now much wiser to utilize the method in preference to the less certain bandaging method.

For many years various chemicals have been utilized for sclerosing varices. Sodium morrhuate was first used in England for this purpose and was later brought to the United States. Up to the present time this drug has been accepted as most successfully fulfilling the requirements of a suitable sclerosing agent. It was first prepared by Sir Leonard Rogers⁵ for use in surgical tuberculosis. Later it was made by Cutting⁶. It was observed by P. B. Kittel⁷ that a 3 per cent solution intravenously caused a hardening of the vein when given in the treatment of surgical tuberculosis. Sodium morrhuate is a sodium salt of a fatty acid extracted from cod liver oil. This drug has shown its superiority on account of its painless effect; relative, but not entire freedom from necrosis on accidental perivenous infiltration; efficiency as a chemical irritant to the intima and almost complete freedom from systemic reactions.

In a critical analysis by one investigator⁸ in which four variations of sodium morrhuate were used in giving 561 injections, the following data was obtained: (1) chemical composition not uniform; (2) therapeutic action not uniform; (3) not completely stable in solution; (4) potency decreases with age; (5) use of local anesthetic in solution with sodium morrhuate not necessary; (6) capable of producing slough. Notwithstanding these criticisms, the investigator still ranked this drug as the most efficacious of sclerosing agents; however, he believes that some fatty acid of a more stable composition will be developed.

In a very recent report by Zimmerman⁹ several cases were cited in which various allergic-like reactions occurred. In two instances the patients manifested symptoms similar to shock, and in others skin reactions. Such a report is significant to the extent that in the future we cannot have the complete freedom from concern in regard to reactions. The incidence of reactions is extremely low and up to this

time does not constitute a serious drawback to this agent. Scratch tests to determine sensitization to sodium morrhuate were ineffective; however, intradermal tests showed reactions in sensitive patients. Unfortunately, controls in some instances were also positive.

It is interesting to study the physiology and a significance of thrombus formation which is primarily dependent on chemical endothelial destruction. Following this chemical injury there is a liberation of a ferment from the intima that stimulates thrombus formation¹⁰. The rate of blood flow determines the nature of the thrombus; if stagnant, it results in one composed of normal proportions of blood and is red; if active, it results in a thrombus composed of platelets and leukocytes, and is white. From the platelets evolve fibroblasts and connective tissue, and finally fibrosis of the veins¹¹. Due to the proteolytic action of disintegrating leukocytes, the red thrombus may be absorbed. On these physiological facts depends the future course of the thrombus, of which more will be said later.

It has been observed in certain cases following the injection of sodium morrhuate that a perivenitis of a localized or rather extensive area along the course of the vein might occur. Various opinions have been held as to the cause. Meisen, McPheeters and Cattel agree that it is a chemical phlebitis. Jacques¹² believes that such a perivenous inflammation is due to a latent infection localized within the vein wall and either chemical injection into the vein or surgical ligation may light up the old infection.

A most important question naturally arises in work of this character and that is in regard to the possibility of recurrences. According to different workers, various factors can produce these recurrences. McPheeters³ states that it is necessary for the great saphenous to be thrombosed up to the saphenofemoral ring. Others have recommended ligating the saphenous vein near the junction with the femoral vein; however, Jensen¹ found no advantage in ligating the saphenous vein, but depends on sclerosing solutions injected high in the thigh. Hence, it seems apparent there is a common agreement that thorough fibrosis of the great saphenous vein materially aids in the prevention of recurrence. An inefficient sclerosing agent undoubtedly is a definite invitation for recurrences. As mentioned earlier in

this paper, the ultimate behavior of thrombi is dependent upon whether they are red or white. It was also mentioned that white thrombi, which are the products of an active circulation, are much superior in the formation of fibrosis of the vein. The practical application of this knowledge, according to Theis", is that it is incorrect to have patients at rest following intravenous injections of the sclerosing agents. Likewise, he objects to the binding of the leg with any form of bandage following injections, since this procedure retards the blood flow. Red thrombi, as all clots, have the quality of retraction as they become older. Such a condition favors the development of small openings between the clot and the vein wall that enables the growth of the endothelial lining to develop where the injury to the intima has been slight. As this process extends, eventually the communicating vessels which unite the superficial and deep venous systems, especially in the leg below the knee, restore a partial circulation. Little by little such a condition sets up the circulation in portions of the superficial venous system and leads to recurrences of varices and the original eczema or ulcer incident thereto. It has been my custom to apply elastoplast or an ace bandage following the injection of sodium morrhuate. In so doing, I have believed that by mechanically approximating the venous walls the ensuing fibrosis required less production of tissue, thereby reducing the amount of time for occluding the lumen of the vein. Now, with this dictum by Theis, it is possible for me to see that some of the few recurrences experienced may be due to the application of bandages and allowing the faulty red thrombus to form.

The technic of injecting sodium morrhuate varies considerably with different workers. Most commonly the injection is given in the most dependent portion of the vein that is in the most distal location in the leg. Cooper", however, injects into the highest point in any vein or group of veins. Some authors advise one single injection a day to be repeated in twenty-four to forty-eight hours as necessary, whereas, others recommend injecting all veins at one sitting. The latter procedure invites reactions from large amounts of the sclerosing agent. In cases with small veins, one to two cc. of the solution will suffice, but in large and long veins up to five cc. are necessary. Although ten cc. can usually be given without untoward ef-

fects, it is safer not to exceed five cc. I usually begin at the lowest point of the vein and inject one or two cc. at one- or two-inch intervals in direct proportion to the caliber of the veins. Quite frequently, in patients living at distances, or for other reasons preventing an early return, injections are given once a week. At each visit an attempt is made to sclerose completely one or several veins.

There is considerable variance of opinion in regard to posture during the injection. Some prefer the prone position in order to drain the vein and get less dilution of the sclerosing agent with the blood while others prefer stripping the vein with the fingers or mechanical occlusion. The application of a tourniquet while the patient is standing facilitates vein puncture and the tourniquet can be retained in place some two or three minutes to prevent dilution of the agent by circulating blood. Other investigators have not seen any advantage in allowing the tourniquet to remain. My personal preference is the standing posture with the tourniquet kept in place for several minutes. On the withdrawal of the needle, some method of closure of the venous opening is necessary. Most frequently the application of a snugly taped square of gauze is made. I prefer the application of a small pledget of cotton which has been immersed in flexible collodion and then pressed in place for ten or fifteen seconds with a tongue depressor. Within two or three minutes these pledgets can be removed without fear of recurrent bleeding. In the event elastoplast is then applied a smoother surface can be had.

Some six to ten weeks are usually necessary to obtain satisfactory results in extensive cases of varicosities and proportionally less in milder cases. This time can be diminished when it is possible to treat cases at intervals of several days.

In regard to topical applications the same principle is carried out as previously mentioned in cases not requiring injections.

Eczema of the legs or ulcers which have their origin dependent on perverted physiology incident to varicose veins nearly always heal satisfactorily when the varices are properly occluded. In the event the valves in the communicating veins are incompetent, or the deep venous system

is not functioning properly, the eczema or ulcers may be recalcitrant. As a whole, however, the injection treatment in these cases is an extremely satisfactory method.

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SUMMER DIARRHEA IN BABIES

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CONGENITAL HEART BLOCK: REPORT OF THE THIRD CASE OF COMPLETE HEART BLOCK STUDIED BY SERIAL SECTIONS THROUGH THE CONDUCTION SYSTEM

Wallace M. Yates, Washington, D. C.; William G. Leaman, Philadelphia, and Virgil Heath Cornell, Washington, D. C. (*Journal A. M. A.*, May 19, 1934), report a case of congenital heart block in an infant boy, aged 18 hours at the time of death. The heart in this case is an example of a three-chambered heart with one auricle and two ventricles, cor triloculare biventriculosum. The auriculoventricular dissociation was caused by an anatomic separation of the muscular conduction bridge between the auricular and the ventricular portions of the heart. This anatomic separation was of developmental and not of inflammatory origin. In a case anatomically similar in most respects to the authors' case (case of Bostroem-Monckeberg) the auriculoventricular bundle was unbroken. Monckeberg demonstrated a similar preservation of the conduction pathway in the nearest related anomaly, persistent ostium primum, in which there is a large defect in the lower part of the interauricular septum. Morison found a rather anomalous course of the conduction system in a heart with the same defect, but apparently conduction was essentially normal. Yater, Barrier and McNabb studied the heart of a woman, aged 59 at the time of death, who had had Adams-Stokes attacks for nearly three years and in whose case electrocardiographic records showed progressively increasing degrees of heart block during this time. The heart had a persistent ostium primum but the course of the conduction system was essentially normal. The acquired heart block was due to fibrosis, apparently from strain, of the upper edge of the interventricular septum, where the bundle of His was located. The reason for the almost constant preservation of the muscular connection between the auricles and ventricles probably lies in the fact that the special bundle appears in the fifth week of fetal life, whereas the membranous separations between the auricles and the ventricles and between the ventricles take form between the seventh and the tenth week. The bundle is preserved between the posterior endocardial cushion and the posterior portion of the annulus fibrosis. In the authors' case these structures fused, and muscular communication between the auricles and the ventricles was destroyed in this region and in all other portions of the auriculoventricular junction where normally no communication is preserved.

UNDULANT FEVER DUE TO BRUCELLA OF THE PORCINE TYPE—BRUCELLA SUI: REPORT OF A MILK-BORNE EPIDEMIC

C. P. Beattie, Selma, Currie, Midlothian, Scotland, and Raymond M. Rice, Council Bluffs, Iowa (*Journal A. M. A.*, May 19, 1934), present their observations of a milk-borne epidemic of undulant fever of thirty cases. Of these patients, twenty-seven obtained their milk from the same dairy. The dairy, from a herd of twenty cows, supplied approximately eighty households; in eighteen of these, cases of undulant fever developed. *Brucella suis* was obtained in blood culture from six of fourteen patients and from the milk of one of the cows in the herd. The epidemic ceased thirteen days after the stoppage of the sale of milk from the dairy. There is a greater virulence of *Brucella suis* than of *Brucella abortus*. The possibility of milk containing *Brucella suis* must be considered.

THE JOURNAL

OF THE

Oklahoma State Medical Association

Issued Monthly at McAlester, Oklahoma, under
direction of the Council

VOL. XXVII AUGUST, 1934. No. 8

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Medical Arts Building, Tulsa, Okla.

Entered at the Post Office at Muskogee, Oklahoma,
as second-class mail matter July 28, 1912.

This is the official Journal of the Oklahoma State Medical Association. All communications should be addressed to The Journal of the Oklahoma State Medical Association, 203 Ainsworth Building, McAlester, Oklahoma. \$4.00 per year; 40c per copy.

The editorial department is not responsible for the opinions expressed in the original articles of contributors.

Reprints of original articles will be supplied at actual cost provided requests for them is attached to manuscripts or made in sufficient time before publication.

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Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

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EDITORIAL

PROFESSIONAL CONSCIENCE

There are three elements to a professional conscience, the profession, society and oneself.

Conscience, like other elements of personality, may develop or deteriorate according to the amount of training or exercise given. In this day we hear many speak lightly of this very essential element of professional life and it would appear that in some instances the conscience had undergone very decided retrogressive changes. A question of right and wrong developing in one's mind is evidence that the conscience still exists and the degree of virility can be determined by the con-

clusion reached and subsequent action of the individual.

In the consideration of the right and wrong of any professional action we should take into account the members of our profession first collectively. Will our action cast an uncomplimentary reflection upon the profession as a whole? Will it in any way lower the standard that we should all try to maintain? Then we should next ask ourselves the question: Will we injure in any way an individual colleague? This may be done by direct attack or the even more despicable innuendo.

Next for our consideration is the social element of conscience. Our duty to society is plain and must be ever kept in mind in the formulation of our conclusions.

Lastly we have our obligation to ourselves.

Pride (not conceit) is very necessary for the maintainance of a high standard of living and pride cannot last in the face of actions carried out against the dictates of a well developed conscience. Be true to yourself.

Take into consideration the above facts and it will never be necessary to consult with anyone as to the right or wrong of a procedure and the question of medical ethics will be solved in quite a satisfactory manner.

1935 MEETING

At the meeting of the committee on general arrangements, for the annual meeting, held in Oklahoma City June 26th, the dates for the 1935 meeting were set for May 13th, 14th and 15th. The Skirvin Hotel was selected as headquarters, with Dr. Henry H. Turner, Oklahoma City, as General Chairman.

Early announcement of these dates is made to avoid conflict with other organization meetings and so that the membership may mark their calendar and begin to make arrangements for attendance.

LEGISLATIVE ACTIVITIES

A meeting of the Legislative Committee was held in Oklahoma City July 6th with all members present. It was first decided that an organized effort would be made to contact all candidates for the Senate and House of Representatives before the run-off primary, to ascertain

their position relative to the outlined program of legislation, proposed by our association. It was further decided that each Councilor would be placed in charge of his respective Councilor district and requested to complete this survey. This proposed program is as follows:

1. The enactment of a Basic Science law which would provide that all who contemplate practicing the healing art be required to pass a Basic Science examination in certain elementary sciences, i. e., anatomy, chemistry, physiology, bacteriology and pathology.

2. An amendment to the medical practice act for the protection of the people and the medical profession.

3. The establishment of a State Board of Health, which is provided for in the constitution of our state, but for which no statute has been written making it effective.

4. An enactment that will remove all state institutions, particularly the state medical school and state hospitals, from the possibility of political interference or control.

5. The taxpayers' money be used only for the medical care of the *indigent* sick in hospitals located in the counties and state hospitals.

As to how thorough this canvas has been it is impossible to say at this time, as the return from the Councilors is not complete, but it is hoped that by this method we will be able to fairly determine the attitude of the next legislature as to medical legislation, before the legislature convenes the first of the year.

REPORT OF THE OKLAHOMA DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION FOR 1934

At the outset may we, "your delegates," express our pleasure in having at a number of our sessions the wise counsel of the President and Secretary of the Oklahoma State Medical Association, Dr. Leroy Long, Sr., and Dr. L. S. Willour. Both of these gentlemen were busy observing transactions in the National Legislative body and planning for a better state association and a better Journal.

Heretofore state secretaries and editors have not been allowed in the executive sessions of the American Medical Association, but at our next meeting at At-

lantic City we believe provision will be made for their presence. They, above all others, should be and are the most interested in these matters, and are in a position to do much good by the proper application of first hand facts. Of course non-medical secretaries should not be allowed in executive sessions.

Other members of our association are welcome in all meetings, except the executive sessions, and we delegates will be delighted to have you with us.

The Cleveland auditorium, wonderfully designed for such a meeting, housed all scientific and commercial exhibits, and all of the scientific sections. The House of Delegates held its sessions at Headquarters Hotel.

The resolutions, by the House of Delegates of the Oklahoma Medical Association, requesting the officers of the American Medical Association to study the problems of providing indemnity insurance for its members, was presented to the House of Delegates of the American Medical Association and referred to the Board of Trustees for study during the year, and we will have their report at the Atlantic City meeting next spring.

If members of our State Association, who in the future have resolutions they expect to present to the House of Delegates of the American Medical Association, would have a conference with your delegates to that body, it will aid us in a mutual understanding of matters to be presented.

The most important matter considered in the House of Delegates at the Cleveland session and probably the most important matter considered by this body in the history of organized medicine in America, was the question of "Socialized Medicine". Socialization of medicine, with health insurance, was instituted in England in 1914, and many countries in Europe have it in one form or another. After resolutions presented by both, the Michigan Delegates and Board of Trustees of the American Medical Association of studies made in England and other European countries, the House of Delegates of the American Medical Association appointed a committee of five (one of your delegates served on this committee) to study and report its findings. The conclusions of the committee were that health insurance and socialized medicine had never been found to be satisfactory, or

of benefit to the public or medical profession in any country.

The declaration of principles for guidance of the association as reported by that committee are given briefly; the points were:

1. The features of medical service in any method of medical practice should be under the control of the medical profession. No other body or individual is legally or educationally equipped to exercise such control.

2. No third party must be permitted to come between the patient and his physician in any medical relation. All responsibility for the character of medical service must be borne by the profession.

3. Patients must have absolute freedom to choose a legally qualified doctor of medicine who will serve them from among all those qualified to practice and who are willing to give services.

The method of giving the service must retain a permanent, confidential relation between the patient and a "family physician". This relation must be the fundamental and dominating feature of any system.

5. All medical phases of institutions involved in the medical service should be under professional control, it being understood that hospital service and medical service should be considered separately. These institutions are but expansions of the equipment of the physician. He is the only one whom the laws of all nations recognize as competent to use them in the delivery of service. The medical profession alone can determine the adequacy and character of such institutions. Their value depends on their operation according to medical standards.

6. However the cost of medicine may be distributed, the immediate cost should be borne by the patient able to pay at the time the service is rendered.

7. Medical service must have no connection with any cash benefits.

8. Any form of medical service should include within its scope all qualified physicians of the locality covered by its operation who wish to give service under the conditions established.

9. Symptoms for the relief of low income classes should be limited strictly to those below the "comfort level" standard of incomes.

10. There should be no restrictions on treatment or prescribing not formulated and enforced by the organized medical profession.

Our President in his address to the House of Delegates of the American Medical Association endorsed extension post-graduate courses now in operation in many states as it is in our state.

If any member of our association should like more detail on any transaction in the House of Delegates of the American Medical Association, one of your delegates will undertake to furnish same; if for a particular study, one of us could loan you full detailed report of transactions which we will receive soon from American Medical Association headquarters.

W. ALBERT COOK,
MCLAIN ROGERS,
HORACE REED.

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Editorial Notes—Personal and General

DR. C. DOLER and family, Clinton, have returned from a vacation in Tennessee.

DR. C. H. GUILD and son, Shidler, are vacationing on the lakes in Minnesota.

DR. OMER H. JONES has moved from Vienna, Mo., and located at Kinta, Oklahoma.

DR. AND MRS. B. B. ROBERTS, Erick, spent their vacation in Tennessee and Kentucky, during July and August.

DR. AND MRS. FRED REWERT, Bartlesville, spent two weeks in July, in Green Mountain Falls, Colorado.

DR. J. T. LOWE, Mangum, has been appointed County Health officer of Greer County and has assumed his duties.

DR. AND MRS. C. W. BESON, Claremore, have returned from a vacation spent in Washington, D. C., New York, and Canada.

DR. AND MRS. FRED H. CLARK, El Reno, have returned from a six weeks' sojourn at San Diego, Los Angeles and San Francisco.

DR. R. L. MITCHELL and son, Muskogee, have returned to their home after visiting in North and South Carolina, New York and Chicago.

DR. AND MRS. W. K. WEST, Oklahoma City, have returned to their home after touring England, Scotland, Belgium, France and Germany for the past three months.

DR. AND MRS. C. E. BEITMEN, Pawnee, have returned to their home after a visit of six weeks

in the East. Dr. Beitmen attended clinics in New Orleans and New York.

DR. W. L. MATTISON, formerly of Chicago, announces that he is associated with Dr. I. L. Cummings, Ada. Dr. Mattison is a graduate of the medical school of Northwestern University, Chicago.

DOCTOR BENJAMIN ALEXANDER OWEN

Dr. B. A. Owen, prominent physician of Perry, died July 17th in an Enid hospital following an illness of about ten days.

Dr. Owen was born in Richmond, Virginia, June 14, 1875. He received his early education in the public and private schools of Powhattan County and the City of Richmond, graduating from the Virginia School of Pharmacy in 1899. He then attended the Medical School of Virginia. This was followed by admission to practice by the Medical Board of West Virginia in which state he practiced medicine for two years. He then entered the Maryland Medical College of Baltimore from which he graduated with the degree of Doctor of Medicine in 1905. Returning to West Virginia he went on with the practice of medicine until 1910, when he came to Oklahoma, locating at Perry.

Since coming to Perry Dr. Owen has been continuously associated with the medical associations of the county, state and nation. He has served several terms as president of the Noble County Medical Society. He has been County Superintendent of Public Health since 1920.

He is survived by his wife and son and four sisters.

Funeral services were in charge of the Masonic Order with interment at Perry.

DOCTOR JAMES LAMBERT MELVIN

Dr. James Lambert Melvin, Guthrie, Oklahoma, died in Bartlesville, Oklahoma, July 24, 1934. Dr. Melvin was born June 1, 1856, graduated at Creighton Medical College, Omaha, Nebraska, 1896; practiced for three years in Nemaha, Nebraska, then removed to Guthrie, Oklahoma, where he practiced continuously until 1933, when he retired. He had been a member of the Logan County Medical Society, also president of the society; was physician of the federal prison at Guthrie since 1900. He is survived by his widow and two daughters, Mrs. Howard S. Browne of Ponca City, Oklahoma, and Dr. Elizabeth M. Chamberlin of Bartlesville.

News of the County Medical Societies

SOUTHEASTERN OKLAHOMA MEDICAL ASSOCIATION elected the following officers at their meeting in Tahihina, June 26th: President, Dr. G. W. West, Eufaula; Vice-President, Dr. F. P. Baker, Tahihina; Secretary-Treasurer, Dr. John A. Haynie, re-elected.

MUSKOGEE ACADEMY OF MEDICINE held their mid-summer meeting July 12th at the Muskogee Town and Country Club. Clinics were held at the Oklahoma Baptist Hospital at 10:00 o'clock A. M., with the following out of State doctors in charge: Dr. C. E. Burford, St. Louis, on "Urology"; Dr. E. H. Carey, Dallas, on "Ophthalmology"; Dr. A. E. Hertzler, Halstead, Kansas, on "Thyroid, General Surgery."

At 1:30 at the Country Club the following program was presented:

Dr. E. H. Carey, "Glaucoma."

Dr. C. E. Burford, "Bladder Neck Obstruction."

Dr. A. E. Hertzler, "Office Treatment of Goitre."

At 8:30 P. M., the guest speakers presented the following program:

Dr. C. E. Burford, "Bladder Neck Obstruction."

Dr. A. E. Hertzler, "Office Treatment of Stomach Trouble."

Dr. E. H. Carey, "Ocular Manifestations of Nasal Origin."

BLAINE COUNTY MEDICAL SOCIETY met in regular session June 21st, at Watonga. Dr. A. B. Chase, Councilor for the Fourth District, spoke on the proposed "Basic Science Law," and its advantages. Dr. Geo. H. Garrison, Oklahoma City, read a paper on "Some of the Troubles and Problems Encountered in Children"; Dr. W. W. Wells, Oklahoma City, read a paper on "The Care of the Breasts Before and After Delivery"; Dr. H. Coulter Todd, Oklahoma City, gave a paper on "The Discharging Ear from a General Practitioner's Viewpoint."

JACKSON COUNTY MEDICAL SOCIETY met June 22nd at Altus, and the following program was presented: "Diagnosis and Differential Diagnosis of Appendicitis," by Dr. W. G. Husband, Hollis; "Medical Treatment of Appendicitis," by Dr. E. S. Crow, Olustee; "Surgical Treatment of Appendicitis," by Dr. John Allgood, Altus; "Complications from a Ruptured Appendix," by Dr. R. H. Fox, Altus.

ELECTROSURGICAL OBLITERATION OF THE GALLBLADDER (SEVENTY-FIVE CONSECUTIVE, UNSELECTED, CASES WITHOUT MORTALITY)

Max Thorek, Chicago (Journal A. M. A., July 21, 1934), states that failures and fatalities in classic cholecystectomy are frequently due to bile leakage, as a result of an inability to obliterate and cover the gallbladder bed, which contains bile capillaries and often larger ducts, in from 15 to 25 per cent of cases. Drains invite bile seepage. A method is described which effectually seals these openings by electrocoagulation. A sterile, hyaline, dry protective layer is substituted for a raw, unprotected surface. The falciform ligament is superimposed over this area. Drainage is entirely omitted. A series of seventy-five consecutive, unselected cases were thus treated without a fatality.

ABSTRACTS « REVIEWS « COMMENTS AND CORRESPONDENCE

EYE, EAR, NOSE and THROAT

Edited by Marvin D. Henley, M.D.
911 Medical Arts Bldg., Tulsa

Importance of Cephalalgia in Ocular Diagnosis. Benjamin L. Gordon, M.D., Atlantic City, N. J. *Archives of Ophthalmology*, May, 1934.

To the ophthalmologist the cranial pain is much more important and pointed than to the man in general medicine. There is a great divergence of opinion as to the exact extent the eyes play in cephalalgia. European ophthalmologists ridicule the idea of seventy-five per cent of all headaches being caused by ocular disturbances; which is the assertion of some men in this field. This paper includes charts and drawings with a brief history of the various theories of cephalalgia, from the time of the Talmud to the present, with the author's observation of some thirteen hundred and thirty-nine patients. He does not believe that neurosis is the cause of the majority of cases of headaches, although a neurotic may or may not complain of headache. They are more apt to suffer from headache if an abnormal ocular condition is present. Ocular headache is located in the extra-cranial muscles and is due to an abnormal nervous condition in the eye itself. Since four of the twelve cranial nerves go entirely to the eye, and three have branches to the eye, it follows that there is a close connection between abnormal ocular muscles and abnormal innervation. When the ocular nerves are normal, refractive errors do not cause headache but may cause such local symptoms as congestive disturbance of the eye and lids, fatigue, pain in the visual organ and blurring of sight. Cephalalgia is in direct ratio to the amount of functional abnormalities of the ocular nerves.

The importance of hereditary cephalalgia is shown by the fact that the author found four hundred and eighty-five patients out of eight hundred and five gave histories of one or both parents suffering from ocular headache, with seventy per cent transmitted through the mother. Headache is seldom suffered by pre-school age children, but generally manifests itself in adolescence. In the presbyopic, with the usual change of vision, cephalalgia may result from eye strain due to inactive ciliary muscles, while in old age the absence of headache is due to the general blunting of sensation.

Astigmatism is higher in females, consequently the per cent of headaches is larger among women than men. During puberty and menstruation women are apt to suffer ocular pain but this does not act as a cause of cephalalgia. Long periods of constant reading or close work, poor light and mental strain are contributing factors to cranial pain. Organic diseases, retinal irritation and eye strain are the three classifications given ocular headache. Glaucoma is the most important organic disease. Iritis, retrobulbar neuritis, choroiditis, retinal irritation and dacryocystitis are other important causes of cephalalgia. Occurrence of headache is also noted in cases of albin-

ism, anisometropia, antimetropia, polycoria and ectopia lentis caused by irritation to the visual centers. During the latter part of the eighteenth century headache was first connected with eye strain. Since that time, through the years of observation and investigation the conclusion has been reached that cranial pain and many other neuropathologic conditions are the result of the injurious effects of muscle imbalance on the eye and nervous system. Both the physician and layman are cognizant of these results and turn to the oculist in case of persistent headache.

In Europe there is a tendency to minimize the ocular origin of cephalalgia and to some extent, that thought has spread to this country in recent years. The author however believes that removing the headache from the legitimate place into "the province of the psychoneurologist is against the every-day experience of the ophthalmologist, who bears witness to the complete relief afforded by the correction of accommodative and muscular errors in a large majority of patients." Usually ocular pain does not occupy the entire cranium surface but may be limited to one side and shifting about from time to time. The onset and sensations of pain in the ocular headache differs from the cranial pain brought on by other causes. Persons with greatly impaired vision are rarely susceptible to ocular headache. In functional monocularly the same is true because the complexity of the fusion sense is eliminated, and the muscular adjustment necessary to maintain single binocular vision needs no coordination; the visual act, therefore, is under less nervous strain. The majority of ocular cephalalgias are frontal. If they are low and relief is obtained by cessation of prolonged use or complete rest of the eyes the etiology is a certainty. In cases where the patient finds there is no fatigue when only one eye is used or when diplopia is apparently present, extrinsic muscle imbalance may be suspected and Van der Brugh's test may be tried. In some cases it is difficult to attribute headache to the eye if the pain is constant and not aggravated by the use of the eyes. Although no errors of refraction are revealed the hyperemic nerve head and other ocular manifestations are symptoms of strain. There is still another group of patients, not to be lightly considered, who have absolutely no abnormalities but the wearing of glasses produces a psychic effect. If all headaches are considered ocular until proven otherwise by elimination, a diagnosis may be readily made. Headaches caused by nephritis, digestive disorders, uterine diseases and anemia are the most important varieties and have more or less distinctive characteristics. An ocular examination should be given for cephalalgia due to migraine since ocular defects are nearly always present. Atropine may be used to assure the nature of the pain. Ocular headache should first be located by refraction which brings relief to about ninety per cent of the patients; to some as soon as glasses are worn and to others a longer time is required. The clinical tragedy of ordering glasses for every headache must be averted by careful diagnosis. Ocular headache is decreasing due to advanced methods of modern ophthalmology

and to better care of the eyes given in the public schools.

Vertigo. W. Russell Brain, London. *The Journal of Laryngology and Otology*, March, 1934.

This manuscript defines vertigo as the sensation of a disordered orientation of the body in space. This orientation depends upon sensory and non-sensory afferent impulses derived from a number of sensory receptors such as the retina, the ciliary muscles, the extraocular muscles, the semicircular canals and otolith organs, the joints and muscles of the cervical spine and proprioceptors of the lower limbs. The multiplicity of ways in which it is produced lends to the difficulty of ascertaining the etiological factor. Vertigo as referred to here is designated as that in which the ear is involved. The simpler forms of aural vertigo may be attributed to blocked Eustachian tube, to chronic suppurative otitis media, to fistula of the external semicircular canal and to the rare acute non-purulent labyrinthitis. Those patients presenting Meniere's syndrome make up the largest group in aural vertigo, the pathology of which is unknown.

The typical aural vertigo presents the following symptoms: sense of rotation of the patient of his surroundings, diminished excitability of the semicircular canals, disturbance of the cochlear functions as evidenced by deafness and tinnitus, nystagmus and a tendency to forced movements, pallor, sweating, nausea and vomiting. The patient does not lose consciousness. Diplopia may occur during an attack. Atypical aural vertigo presents almost any variation of the above symptoms.

In the diagnosis about eight etiological factors are considered. Vertigo may result from lesions of the eighth nerve such as acoustic neuroma, localized arachnoiditis and syphilitic meningitis. As a rule lesions of the eighth nerve do not produce such serious symptoms as do functional disorders of the ear. In the lesions of the pons and medulla we have thrombosis of the posterior inferior cerebellar artery, vascular lesions of the lateral part of the tegmentum of the pons and in disseminated sclerosis a pontine lesion probably causes vertigo. According to the writer vertigo is not a pathognomonic symptom of cerebellar disease. Hyperpiesia is commonly accompanied by vertigo probably due to a disturbance of circulation through the labyrinths.

Intracranial tumors usually give symptoms of increased intracranial pressure and of a progressive focal intracranial lesion in addition to vertigo, which is most common when the growth is situated in the region of the brain-stem. Head injuries do not as a rule produce a rotatory vertigo but more a sense of dizziness or unsteadiness with the triad of symptoms, i. e., impaired concentration, irritability and nervousness, which characterize a persistent cerebral contusion. Sometimes vertigo is an aura of epilepsy. However in petit mal the attack is always sudden and consciousness is always impaired, the attack is brief and recovery is rapid while in aural vertigo loss of consciousness is extremely rare, recovery slow and a sense of instability persists for hours if not days.

One theory of migraine is that it is due to a spasm of the arterioles. Such a spasm may involve the retina producing a retinal thrombosis. The vertigo, if present with migraine, is thought to be caused by a spasm involving branches of the internal auditory artery or the arteries supplying the vestibular centers. The common complaint in neurosis is the feeling as though the legs were giving away and the

patient is in danger of falling. He finds his dizziness difficult to describe.

For the medical treatment of aural vertigo luminal is recommended. For the surgical treatment a division of the eighth nerve has been done in a small number of cases with gratifying results.

Genuine Ozena. Dr. Harry L. Pollock, Chicago. *The Laryngoscope*, May, 1934.

Pollock takes exception to the statement that ozena is comparatively rare and finds that his case records show a large proportion of patients to be natives or descendants of natives of southern and southeastern Europe. Spanish publications show this condition to be very prevalent there. In this country there is much confusion in regard to the therapeutics and etiology of this disease as is evidenced by the different papers of prominent rhinologists. The profession usually does not view this disease with alarm because it does not require the initiation of life-saving measures. The incidence is about five times more frequent in females than in males. The most frequent age of occurrence is in the second decade of life but has occurred as early as two years and rarely over forty-five years of age. In regard to the etiology there are a number of hypotheses, none distinctly proven, which seem to point definitely to the fact that heredity plays an important part in the perpetuation of this disease. It may be that the disease itself is not transmitted from one member of a family to another member but there is a familial predisposition as evidenced by the tracing of this disease through several generations. It is probably an inherited lack of development of the bones and mucosa of the nose. The bony framework of the nose is not fully developed and associated with changes in the cartilage results in a saddle nose with a deep-seated nasal root, a wide flat dorsum and the apex tilted upwards. The nostrils are relatively wide and the soft parts thickened. According to the author these points characterize the so-called ozena type of nose. Numerous attempts to actually transmit this disease to animals such as dogs, cats, etc., have been failures. Equally unsuccessful have been the attempts to inoculate fellow human beings even when an emulsion of the secretion was injected under the mucus membranes of the nose. This would seem to prove conclusively that the disease is not infectious.

Various forms of medication, local and constitutional, are mentioned as used by different men but according to the author these are of no avail. He states that permanent relief is based on the principle of the narrowing of the intranasal space. The attempts to produce this result have been by apposition of the lateral wall of the nose with septum or by a submucous implantation of a substance in the septum so that it will be thicker and the intranasal space so reduced. After experimenting with various substances for the implant, ivory was settled on as the one giving the most satisfactory results. He describes his method of preparing and inserting the implants to which he attributes a great deal of his success. Different palliative measures give only temporary relief. An extensive bibliography dating from 1875 up to the present day is appended.

Lingual Thyroid Gland. Henry B. Perlman, M.D., Chicago. *Archives of Otolaryngology*, May, 1934.

The embryology of the thyroid gland is again reviewed. We are reminded in this article that a ventral invagination of the pharyngeal endoderm just anterior to the first branchial cleft gives rise to the thyroid gland. The anlage is first a hollow tube,

the distal part of which becomes solid and is dependent with the trachea. As it progresses downward it is divided into two parts as does the thyroglossal duct. The thyroglossal tract atrophies and we have the lateral lobes and isthmus of the thyroid gland. The progress downward of the anlage may be interrupted at any point and then we have lingual, sublingual, suprahyoid, infrahyoid, pretracheal or normal and intrathoracic glandular masses depending upon the point of interruption of the descent. The rarest site of this anomaly is in the lingual region.

The first case was reported in 1869. This occurs eight times as frequently in females as in males. The local symptoms are the same as those of any benign tumor at the base of the tongue and if the mass is large enough there will be dyspnoea. The mere presence of a lingual thyroid gland is not an indication for surgery. If there is actual obstruction then some means of relief must be inaugurated. It must be determined whether the mass is an outgrowth of the true thyroid or an accessory growth. Steps must be taken to find out whether or not the body is receiving the products of a normally functioning gland. If there is an absence or deficiency of thyroid tissue in its normal situation, complete removal of the lingual thyroid gland is definitely contraindicated. Puberty, menstruation, pregnancy and menopause produce a change in the size of the tumor mass.

Three cases are mentioned and two are reported with history, physical examination, laboratory tests and treatment. One patient had a basal metabolic rate of minus 10, and the other a plus 18. Surgery was recommended in the case with a plus 18 metabolic rate. The patient, age 55, a male, did not return and enter the hospital as advised. The chief complaint of the other patient, age 43, a female, was her inability to swallow, although liquid barium passed normally as shown by roentgenograms. Because of this continued complaint further roentgen examinations were done and the report was: Under fluoroscopy there were normal muscular movements present during the act of swallowing; considerable difficulty (nervousness? hesitation?) was evidenced in swallowing a solid bougie of barium sulfate and gelatin. Only by direct pressure of the finger applied to the bougie over the base of the tongue was the patient able to swallow it. Certainly no obstruction was present. This patient was assured that no surgery was necessary and that she would be able to swallow normally in time. After a period of about four months she was suddenly able to swallow without any discomfort. Illustrations accompany the report which present two distinctly different types of lingual thyroid gland.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D.
1717 North Robinson Street, Oklahoma City.

Knee-joint Visualization. A Roentgenographic Study With Iopax. Douglas Boyd, M.D., Highland Park, Ill. Jour. Bone and Joint Surgery, July, 1934.

The author uses a fluid called iopax which has been used for sometime by Dr. Geza de Takats in visualization of arteries, and in the Clinic of Michaelis in Germany, reported in 1931. Iopax, readily soluble in water, rapidly mixes with the watery fluids present in the joints. It was used on ambulatory patients with knee joint symptoms for the purpose of making X-ray visualization of the synovial membranes and joint surfaces. Aseptic surgical technic was used.

The solution was autoclaved thirty per cent iopax, dissolved in five-tenths per cent novocain. Injection was made directly into the suprapatellar pouch, from the lateral aspect of the joint at a level of the superior border of the patella, using about 40 to 60 cc. of the fluid.

The author quotes a number of case studies from Michaelis and from Northwestern University Medical School Arthritis Clinic. In some of his own cases, he found in villous synovitis, some cases of hypertrophic arthritis and infectious arthritis which were relieved of pain temporarily and in a few cases permanently. There was a local pain and forty-eight hour of reaction but no permanent symptoms of disturbance to the knee joint. In joints without effusion, salt solution was used before the injection and then withdrawn. This was for the purpose of making certain of the position of the needle. He made some experimental studies on the joints of dogs and found the only change was injection of the small blood vessels on the anterior aspect of the synovial lining beneath the patella, five days afterward, but no cellular exudation.

Seven of his patients had no unfavorable reaction and in one case some of the injected fluid was placed outside the synovial sac with no serious discomfort. He commented that one should have a good acquaintance with the X-ray appearance of knees so injected before giving a dogmatic interpretation of the roentgenograms. He thinks the method has diagnostic value, particularly in separating the chronic arthritic knee from those joints which might more readily yield to surgical treatment, namely the doubtful displaced cartilages, loose bodies, the true hypertrophic synovitis, and erosions of the weight-bearing surfaces of the cartilage. He believes it also of value in the diagnosis of early syphilitic and tuberculous joints, as well as in a more complete study of certain old traumatic conditions of the knee.

Iopax is secured from Schering and Gatz.

Recurrent Dislocation of the Shoulder. Toufick Nicola, M.D., New York City. Jour. Bone and Joint Surgery, July, 1934.

This paper is limited to further observations on the operation of recurrent dislocation of the shoulder, which the author first described in 1929. (Abstracter's note: The Nicola operation has been reported very favorably by a great many orthopedic surgeons and although somewhat technical the end results are usually very satisfactory). The author says that each case should be studied very thoroughly in respect to pathology, which may be divided into three groups, bony, capsular and muscular. His technic is:

1. Incision begins just outside of the coracoid and passes downward for two and one-half inches in the line of the fibers of the deltoid.

2. The deltoid fibers are divided by blunt dissection. At this point the circumflex nerve and artery may come into view crossing the wound. If so, care should be taken to avoid injuring them.

3. The tendon of the long head of the biceps is located by feeling for the bicipital groove. The tendon is then exposed up into the shoulder joint by dividing the transverse humeral ligament, which holds the tendon in the bicipital groove, and by splitting the capsule in the line of the fibers continuous with the transverse humeral ligament.

4. The tendon of the long head of the biceps is divided about one inch below the cut margin of the transverse humeral ligament after first fixing the

proximal and distal parts. The elbow is flexed at about forty-five degrees.

5. By means of a quarter-inch drill a hole is made through the head of the humerus, beginning in the bicipital groove about one inch distal to the lesser tuberosity. The hole comes out on the articular head of the humerus in the line of the direction of the tendon near the edge of the articular cartilage.

6. A flexible probe is passed through the tunnel from the proximal end, threaded with black silk which is attached to the proximal part of the divided tendon. The tendon is then drawn through the tunnel and united to the distal part by means of the black silk which was passed through the tendon before it was divided.

7. The arm is abducted to a right angle and the transverse humeral ligament is sutured to that part of the tendon of the long head of the biceps which lies in the bicipital groove.

8. The transverse humeral ligament and the capsule are sewed with continuous No. 1 plain catgut sutures.

9. The shoulder is put up in a simple Velpeau bandage reinforced with adhesive plaster, with the arm close to the chest and the elbow flexed to forty-five degrees. This position is maintained for two weeks and immobilization is maintained for six weeks.

10. Radiant heat, massage and active movement may be carried out later.

The author made some experiments on normal tendon to test the tensile strength of the live tendon on the long head of the biceps and found this tendon would hold as much as 6,910 to 7,810 pounds per square inch.

Non-Tuberculous Infections of the Spine. Armitage Whitman, M.D., New York City, and Raymond W. Lewis, M.D., N. Y. City. *Journ. Bone and Joint Surgery*, July, 1934.

The authors mention the numerous infections of the spine, including osteomyelitis, osteoarthritis, typhoid arthritis, lues, Neisserian infection, fungus infections, undulant fever and unclassified infectious arthritis. They state it is sometimes very difficult to recognize and classify from the X-ray and clinical study. They quote an article by Smith, directing attention to a benign form of osteomyelitis which is very difficult to distinguish from tuberculosis. He reported four cases which he believed to be non-tuberculous spine infections.

The authors bring out, in the case reports, the peculiarities of the symptoms of the four cases in which they proved to their own satisfaction that there was a small sequestrum lying in the tissues near the nucleus pulposus and in one case near the right transverse process of the fifth lumbar vertebra which at first produced a necrosis similar to tuberculosis but healed by bony spurs bridging across the intervertebral spaces.

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
LeRoy Long Clinic
714 Medical Arts Bldg., Oklahoma City

The Reinforcement of Their Sclerogenic Effects by the Association of Liquids Employed for Curative Fibrosis of Varices: Benzoate of Sodium (Cumul de Leurs Effets Sclerogenes par l'Association des Liquids Employes pour la Fibrose Curative des Varices: Le Benzoate de Soude). By G. Delater and M. Chailly, *La Presse Medicale*, June 23, 1934.

Endeavoring to evolve a method that would be less painful, more nearly free from untoward effects, and at the same time satisfactory from the standpoint of the principal purpose—the sclerosing effect upon the two inner tunics of the vein—a mixture of equal parts of 40 per cent sodium salicylate and 40 per cent sodium benzoate, usually not more than 3½ cc. of each solution, well mixed, is injected at one time.

Benzoate of sodium is endowed with much less activity than salicylate of sodium, but it is an interesting clinical fact that when the solutions of the two are used together they seem to reinforce each other in the production of sclerosis—and this with less discomfort.

Comment: The technique is not discussed, but it is understood that no treatment of this character should be undertaken without a knowledge and practice of the essential technique.

—LeRoy Long.

Hyperparathyroidism, From The Journal of the American Medical Association, April 21, 1934, page 1276, by Fuller Albright, Joseph C. Aub, and Walter Bauer, Boston.

Most of the cases of hyperparathyroidism so far in the literature have represented the classic form, i. e., osteitis fibrosa cystica. This type of the disease is rare and offers no diagnostic difficulties. The authors' object in this paper is to point out that there are other forms of hyperparathyroidism which are not rare pathologic curiosities but conditions that every practitioner will not infrequently meet. The seventeen cases that form the basis for the paper were all studied in the Massachusetts General Hospital and a parathyroid tumor was removed in each instance.

Pathology

Hyperparathyroidism is a disease that is usually due to a functioning adenoma of one or more of the parathyroid glands. As a result of the increased production of the hormone, there is a disturbance in the metabolism of calcium and phosphorus. The early measurable manifestations of this disturbance are an increased serum calcium level, a decreased serum phosphorus level, and an increased excretion of both elements in the urine.

Bones: The bones are the only storehouse for calcium and phosphorus in the body, so that this increased loss in the urine, other things remaining equal, leads to a demineralization of the bones. The bones become porous and fibrosis occurs. Clefts may develop in the fibrous areas and enlarge until they form cysts with fibrous walls. Benign tumors of bone tissue with giant cells occur. The disease at this advanced stage with cysts and tumors has been called

von Recklinghausen's disease of bone or osteitis fibrosa cystica.

Duration of Disease

Whereas the disease may produce a fatal issue—usually from renal involvement—it probably smoulders on for years in the majority of cases, crippling but not killing.

Symptoms Due to Hypercalcemia: Just as hypocalcemia causes an increased excitability of nerve-muscle apparatus (tetany), so hypercalcemia causes the opposite. Hypotonia, lassitude, constipation and other similar manifestations are often present and are related to this effect of hypercalcemia.

Symptoms Due to Skeletal Involvement: These symptoms vary in severity from the case showing absolutely no bone symptoms to the case in which the skeleton becomes practically nonexistent. A spontaneous fracture is often the event that first calls attention to the underlying disease. Bone tenderness and bone pain, usually called arthritis, neuritis and the like, have in most instances been present long before. Bone deformity is a late manifestation. Loss of height and kyphosis is sometimes seen. Bone tumor due to an underlying cyst may be an early manifestation. This is especially apt to occur in the jaw and may be treated as an epulis for years before the underlying condition is recognized.

Symptoms Related to Hypercalciuria and Hyperphosphaturia: Polyuria and polydipsia are present in almost all cases and are usually attributed to the increased excretion of calcium and phosphorus. Renal colic or some other manifestation of nephrolithiasis may be the first and only symptom. One patient had all the symptoms, signs and laboratory manifestations of Bright's disease. The authors are inclined to believe that hyperparathyroidism will turn out to be a fairly common cause of urinary stone, and that in the future the case in which there is a stone and no bone disease will be the commoner type of hyperparathyroidism.

Before operation an effort should be made to localize the position of the tumor. In two cases in this series the tumor was visible in the anterior mediastinum by roentgenograms. The tumor often lies in close proximity to the esophagus, so fluoroscopy during the administration of barium by mouth might be of help.

Laboratory Data. Serum Calcium and Serum Phosphorus: Once the diagnosis is suspected, its confirmation or exclusion depends on the chemical laboratory. Hyperparathyroidism is almost unique in giving the combination of a high serum calcium and a low serum phosphorus level. Instructions are given as to the method of taking and examining the blood serum. The authors are of the opinion that the examination of the blood serum is more practical and helpful than is the examination of the urine.

The plasma phosphatase level, probably an index to the degree of osteoblastic activity, is elevated in hyperparathyroidism in proportion to the amount of bone disease and independent to the degree of hyperparathyroidism.

Operation: The chief operative difficulty is in finding the tumor. Only two patients in this series had palpable tumors before operation. Before undertaking the operation a surgeon must be more than just "a good thyroid surgeon". He should know the normal and possible aberrant situations of the parathyroid glands; he must be familiar with their reddish brown color and smooth surface (in contrast to the granular surface of thyroid); he must be able to differentiate them from lymph nodes, collections of fetal fat, and thyroid lobules, and he must be pre-

pared to continue the search, even if this leads him into the anterior mediastinum. For the latter reason, the surgeon must not undertake the operation until he is convinced by the blood chemistry that a tumor is present. There is no time like the initial operation to find the tumor. The surgeon can expect, given a marked degree of hyperparathyroidism, to find a sizeable tumor. At first the authors believed by analogy with hyperthyroidism that a small amount of tissue might cause a marked degree of the disease. It now seems clear, however, that the tumor tissue is no more potent per gram of tissue than normal tissue. Therefore, except in very mild cases, the surgeon need not stop at every minute body encountered. This applies to normal parathyroid bodies as well. These must in no case be removed by the surgeon, who is unable to find the tumor, in the hope that some good will be done. Such practice only increases the danger of severe tetany if the tumor is later found.

Unlike thyroid adenomas, parathyroid tumors mold themselves surprisingly well into crevices, as between the esophagus and the trachea. This means that one can be very close to them and still not palpate them.

We believe with the authors that hypoparathyroidism following the removal of a tumor may be very dangerous. Tetany is most marked in the patient with most bone disease and is probably to be attributed to this fact more than to atrophy of disuse in the remaining parathyroids. We see no objection in doing a subtotal resection of the tumor. When normal parathyroids have been removed at previous operations this should, of course, be done. If a surgeon decides on this procedure he should leave behind, with a good blood supply, a piece of the tumor considerably larger than a normal gland. The tendency, because of experience with hyperthyroidism, is to leave too little.

The surgeon should keep in mind the fact that multiple parathyroid tumors do occur.

Nonsurgical Treatment: There is no successful treatment of this condition other than surgery. Maximum doses of x-ray over the neck have been given with no obvious change in the blood or urinary value. Treating the tumors of the skeleton with x-ray should also be avoided. Whereas it may cause temporary benefit to the tumors it will not affect the cysts and will tend to increase the fibrosis of the marrow and in that way enhance the anemia.

A high phosphate diet, a high calcium diet, or preferably both will prevent decalcification. However, kidney complications will soon develop. Because of the fact that dietary management will not prevent kidney damage it is to be avoided.

Viosterol in large amounts was administered to several patients during which time careful metabolic studies were done, and no appreciable effect on the calcium or phosphorus balances were noted.

The conditions mentioned under the heading differential diagnosis are senile osteoporosis, Paget's disease, osteomalacia, solitary cysts, solitary benign giant cell tumor, osteogenesis imperfecta, metastatic malignancy, basophilic adenoma of pituitary.

The postoperative course, starting in the first few hours after tumor is removed, shows a marked decrease in the output of urine and in the excretion of calcium and phosphorus. Tetany may develop if the blood calcium falls below 7 milligrams. The sudden change from a high blood calcium to a low one may cause visual disturbances and may effect the mental equilibrium. The time required for blood calcium and phosphorus to return to normal prob-

ably depends mostly on how much the skeleton has to be repaired.

The improvement in symptomatology to be noted following operation is extraordinary. Whereas the patient's only complaint before operation may have been related to a fracture, he not infrequently says after the operation that he has not felt so well in years. A gain of weight is marked; constipation disappears; lassitude is replaced by a feeling of energy; bone pain and tenderness disappear within a few days.

Comment: Dr. Churchill has operated on these cases at the Massachusetts General Hospital. Last spring I had the opportunity of seeing him operate several cases. He has published an excellent article in the February, 1934, S. G. and O. Whereas this disease can hardly be called common it must very frequently be considered when any of a multiplicity of symptoms is present. Failure to make the diagnosis is regrettable in that therapy for it is highly successful.

—LeRoy Long, Jr.

Malignancy in Cervical Polyps. By Faith S. Fetterman, Philadelphia, Pa. *American Journal of Obstetrics and Gynecology*, July, 1934, Page 120.

This author has presented the subject because of the repeated differences in the opinion as to the malignancy of cervical polyps seen.

In reviewing the literature he shows that pathologists agree that malignant degeneration of cervical polyps is rare. He reports the experience of a number of pathologists who have been impressed by the bizarre proliferation of epithelium and the irregular epidermization in these polyps, making them suspicious of malignancy. However, from a clinical standpoint, practically none of them have been malignant.

This author has reviewed the pathological reports of 1000 consecutive gynecological cases, in which examinations of 100 polyps were found. Ninety-four of these were unquestionably benign, and six were reported as malignant. The author has detailed the history of the six cases so reported. Of these, three were associated with carcinoma of the uterus elsewhere, either in the body or cervix. Of the three remaining cases in which there was no associated malignancy, all of the cases have remained well after treatment.

The author raises several questions. The first of these has to do with whether all cervical polyps discovered should be removed and examined for malignancy. For conclusions to this question he quotes Schumann: "Malignant degeneration of these essentially benign tumors is not very common, but it does occur with sufficient frequency to justify and warrant the close histological study of every excised growth."

The second question raised has to do with the line of procedure when an able pathologist sends back the report, "Suspicious of early malignancy". He asks the question of whether or not one should rest upon the belief that a complete removal of the growth has sufficiently protected the patient or whether upon the suspicion of malignancy in the polyps, irradiation of the cervix should be carried out.

His conclusion about the second question is to the effect that a conference of the surgeon and pathologist should be had over each case in order to evaluate the histological picture. He emphasizes the importance of an especially careful clinical followup in the event of simple removal where a suspicious microscopic picture is discovered.

Comment: There is certainly no question but that all cervical polyps removed should be carefully examined microscopically. In the event that a report of suspicious malignancy is returned, certainly a conference between the surgeon and pathologist is extremely important. It is well to add in this direction that examination of the sections by several pathologists is also of extreme additional value in doubtful cases. This certainly should be done before any radical measures are carried out, because the treatment, whether operative or irradiation, for cancer is radical treatment, and one should feel absolutely sure of the diagnosis before such means are taken. Of course, this applies to other suspicious carcinomatous areas as well as those in cervical polyps.

—Wendell Long.

Sterilization of the Female by Coagulation of the Uterine Cornu. By Mortimer N. Hyams, M.D., New York, N. Y. *American Journal of Obstetrics and Gynecology*, July, 1934, Page 96.

The author has devised a means of sterilization, particularly applicable in those cases where sterilization is necessary from the standpoint of constitutional defects or abnormalities, where the patient is not a good operative risk and sterilization by opening the abdomen is a more or less radical measure.

By the use of an ingenious apparatus fully described, he introduces a metal tip into the uterine ends of the Fallopian tubes, where by high frequency current coagulation is carried out. This procedure can be done in the office; it requires no anesthesia or hospitalization, no after treatment is needed and the results are effective.

One month following the coagulation, tubal insufflation or hysterosalpingorrhaphy is attempted. If at that time the tubes are not completely sealed, the procedure is repeated.

The author emphasizes the fact that perforations of the uterus or Fallopian tubes are impossible, as the sealing of the oviduct is accomplished in the uterine cavity.

He feels very definitely that the procedure should not be carried out during menstruation, nor in any of the following situations: uterine cavity distorted by submucous fibroids, acute or subacute inflammation of the pelvic organs, hydrosalpinx, hematosalpinx, or pyosalpinx.

Comment: Dr. Hyams originated the procedure of conization of the cervix by high frequency current. By an extremely ingenious device, he now presents a method for coagulation of the uterine ends of the Fallopian tubes, by the same agency.

—Wendell Long.

The Treatment of Tumors of the Ovary. By Howard C. Taylor, Jr., New York City. *New York State Journal of Medicine*, January 1, 1934.

The author emphasizes the fact that special difficulty in the treatment of ovarian tumors, as distinct from tumors of other organs, arises from the existence of many types which differ widely in their tendencies for further growth and for the development of certain complications. This has much to do with the selection of the form of treatment which should permit every possible conservation of function and at the same time avoid the preservation of organs which may be a future source of danger.

The extent of treatment required in a given case

of ovarian tumor he outlines as dependent upon four variable characteristics:

1. The tendency to develop to a great size is an important consideration in deciding the first question of whether or not to operate. Certain of the small, non-neoplastic cysts will remain relatively stationary or will regress, while others, such as the pseudomucinous cysts, will almost inevitably reach enormous proportions.

2. The tendency to develop various complications, particularly torsion, is a hazard frequently sufficient to make a decision against delay in operating.

3. The tendency to bilateral development must be the chief guide in determining the advisability of limiting the operation in a given case to the removal of only one ovary.

4. The frequency of the malignant transformation of benign tumors remains a disputed question. The author discusses this question at some length. He also considers the problem of the aid to the patient in relation to the extent of surgical treatment necessary, but gives the four preceding considerations as the most important ones in determining proper treatment.

He then divides the tumors of the ovary in the following manner:

1. Non-neoplastic Cyst and Endometriosis

Corpus luteum and follicle cysts are in most cases temporary structures. Because of the relative frequency of these minor cystic enlargements of the ovary, the treatment in young women of cysts under three inches in diameter should properly be begun by a period of observation before surgery. If such cysts are found after the abdomen is opened, the maximum operation should be the enucleation of the cyst or a partial oophorectomy. The author points out two special circumstances where there is opportunity for intelligent conservatism: Firstly, in patients in whom cysts of the ovary are found after a previous gynecological operation, a second should not be undertaken until the pathological findings of the first has been ascertained, for such cysts as a rule prove harmless. Secondly, the less common situation of multiple corpus luteum cysts occurring in association with hydatidiform moles also tend to disappear spontaneously after the cure of the uterine disorder.

The author points out in the question of endometriosis that there has been a recent tendency to radical measures. However, in reviewing the literature and considering his own experience a conservative approach to endometrial lesions of the ovary is decidedly recommended. He discusses the question of the treatment of endometriosis by a partial or a complete castration dose of x-ray as advocated by some gynecologists, but feels that this should not be employed unless the diagnosis is first established, which rarely is possible until exploratory laparotomy has been done. X-ray in endometriosis therefore has its chief place in recurrent cases, or in cases with persistent symptoms after a conservative operation.

2. Benign Tumors Predominately Unilateral

This second group of neoplasms which as a rule occur as unilateral cysts are usually treated by removal of the affected ovary only. They include the dermoid, the fibroma and the pseudomucinous cyst. In these tumors the presence of disease in the second ovary is infrequent and malignant change rare. However, complications such as great size, torsion, sup-puration, and pressure on the surrounding organs are so common that surgical intervention is necessary.

3. Benign Tumors With Bilateral Tendency

In this group of tumors the author places those usually classified as benign but with a strong tendency to bilateral development and apparently a close relationship with the malignant growths. These are the papillary cystadenomas. The special liability of the opposite ovary to be involved and the difficulty of distinguishing these papillary tumors from the papillary cystadeno-carcinomas, sometimes even under the microscope, makes special care in their handling necessary. Therefore, he recommends that in all cases in which a conservative operation is contemplated, microscopic examination by frozen section should be made if possible before the abdomen is closed, and in all doubtful cases, particularly in women over 35 years of age, both adnexae should be removed. He recommends particularly that the more radical procedure be carried out in certain forms, notably those with slender papillae and those with papillae on the outside of the cyst than in the other type with coarse, sessile growth on the inner surface.

4. Carcinoma of the Ovary

The author has divided this subject into three phases: (1) Operability. (2) When the abdomen is opened how extensive an operation is to be undertaken. (3) After the operation is complete whether x-ray is to be given.

In the field of operability, the author points out that many cases of ovarian cancer are definitely diagnosed only upon opening the abdomen, and this must be recognized as usually the first procedure. However, because of the high mortality rate in the advanced cases two categories should be eliminated from the group to be operated upon: (1) In all cases of apparently malignant ovarian tumor the possibility of growth being secondary in the ovary must be considered and operation undertaken only after exhaustive search for cancer in other locations, particularly the gastro-intestinal tract. (2) Certain very advanced cases with ascites, cachexia, large pelvic tumors and upper abdominal masses are readily recognized as inoperable, and treatment should be limited to external radiation.

The extent of the operation: When the growth is found apparently confined to one or both ovaries, there is a general agreement that a complete hysterectomy should be performed with the removal of both appendages. The author emphasizes the importance of the removal of apparently uninvolved ovaries in this situation, and also discusses the question of leaving the uterus as a holder for the future use of radium. He emphasizes the doubtful wisdom of the extension of the operation to the removal of single metastatic lesions from organs outside of the pelvis. For example, resections of parts of the bladder and the intestinal tract have not given especially favorable results. Upon the other hand where a metastatic area was involved in the omentum alone certain good results have been obtained. He then discusses the question of cancer which is widely disseminated on the pelvic or general peritoneum where the question arises as to whether any surgical procedure should be carried out. He states that it is his practice to remove all the carcinomatous tissue possible in the belief that x-ray may be more effective afterwards, although this has no sound basis of proof.

3. Post-operative Radiation

He feels that in review of their own cases and cases from other clinics where simple surgical treatment of ovarian cancer has been carried out that there

is no question but that postoperative radiation therapy should be given in practically all cases.

In concluding, Dr. Taylor points out that the problem in treatment of ovarian tumors is not primarily a technical one, but one of differentiation of the special type, with recognition of the varied potentialities of the members of the group.

Comment: This is a very important subject because of the frequency of ovarian tumors, the tremendous importance of conservation of function, particularly in young women, and the equally important necessity of removing malignant tumors at the earliest possible time. Because of the varied types of tumors found in the ovary and the differing degrees of potentiality contained therein, the subject of treatment of ovarian tumors is a most difficult one, even for an individual particularly trained in this field. Dr. Taylor has outlined in a very concise and instructive manner a very large and important subject.

—Wendell Long.

Bloody Discharge From the Nipple (Les Ecoulements Sanglants Par le Mamelon). By Jacques-Charles Bloch et Mme. Renee B. Wechsler. *La Presse Medicale*, May 16, 1934.

In this article the authors insist upon a definite distinction between the cases where there is bleeding from the nipple in connection with a demonstrable neoplasm, and the cases in which there is bleeding from the nipple without a demonstrable neoplasm.

In the case of the first group it is obvious that radical surgical procedures should be carried out; in the second group there is room for doubt, and the proper care of this group is the burden of the article.

When there is no neoplasm present, the discharges are very rarely pure blood, but usually serum stained with blood—sometimes brownish in color. It frequently appears in the form of isolated droplets in the orifices of the galactiferous ducts, and there is staining of the linen. Sometimes it may be necessary to make a microscopic examination of the fluid in order to determine whether it contains blood.

The evolution is very irregular and capricious. In the case of some patients it appears to be governed a good deal by the menstrual periods. Occasionally such discharge appears at the menopause.

The investigation of the authors led them to believe that in practically all these cases of bloody discharge from the nipple without demonstrable tumor there is, nevertheless, the presence of intra-canalicular papillomatous growths. Some case reports are presented which seem to bear out this conclusion.

While admitting the possibility of the existence of bloody discharge from the nipple over a long period of time without demonstrable malignant disease, the authors warn of the necessity of bearing in mind the possible existence of such a disease, and of the evolution of apparently benign papillary growths into malignant disease.

The study of microscopic sections has enabled the authors to come to the conclusion that in the group where there is bloody discharge without demonstrable tumor the pathology occupies a small and circumscribed area near the nipple. With this finding as a basis, they have devised a plastic operation through which the diseased area is removed, without the removal of the nipple, and without much, or any deformity of the breast. They insist that this operation should be done under a general anesthetic be-

cause of the difficulties in infiltrating the breast tissue with an anesthetic solution.

Comments: While it is well known that bloody discharge from the nipple may continue over a long period of time without other evidence of malignancy, it is a situation that requires careful and wise consideration. When one visualizes the difficulty in doing a plastic operation through which all papillomatous tissue would be removed, one doubts the wisdom of such a procedure.

I believe that this article is important in calling attention to the distinction that should be made between the group in which there are demonstrable lesions, and the group in which there are no demonstrable lesions. Taking into consideration the distinct possibility of malignant evolution, we believe that it is best to advise a simple mastectomy in the case of all patients who have bloody discharge from the nipple without demonstrable lesions. It is, in our judgment, far better to sacrifice a breast than to run the risk of the development of malignancy in such doubtful situations.

—LeRoy Long.

USE OF DIPHTHERIA TOXOID IN IMMUNIZATION OF MEDICAL STUDENTS AND NURSES

Alvin E. Keller and Seale Harris, Jr., Nashville, Tenn. (*Journal A. M. A.*, June 30, 1934), gave forty-six medical students and twenty-six nurses from two to four injections of toxoid. Those receiving undiluted toxoid were given three injections at intervals of three weeks, beginning with 0.3 cc. for the first dose, 0.5 for the second and 1 cc. for the third dose. This was the usual procedure with respect to undiluted toxoid except when there was any complaint as to the severity of the previous reaction, under which circumstances the dose was reduced. The first dose of diluted toxoid given to the "reactors" was 0.2 cc. Each successive dose was usually double the previous one unless the reaction was severe enough to be of significance. The entire group was retested with the Schick and control tests from three to six months following the last injection. The results show that it is possible to immunize students and nurses against diphtheria with diphtheria toxoid without producing any undesirable general or local reactions. The same procedure can be applied to the civil population under conditions in which immunization against diphtheria is indicated. By testing intradermally with a skin test dose of dilute toxoid each person in the older age groups who has a positive Schick test, those individuals in whom a severe reaction would occur following a subcutaneous injection of toxoid can be detected. Those who have a negative toxoid skin test can be given the usual dosage of diphtheria toxoid, while the dilute should be given to those who have a positive toxoid skin test or "toxoid reaction test." The observations emphasize the desirability of using diphtheria toxoid to replace diphtheria toxin-antitoxin mixture as an immunizing agent.

REPORT OF EXAMINATION FOR LICENSES TO PRACTICE MEDICINE

Examination held at State Capitol, Oklahoma City, June 6th and 7th, 1934. The following applicants passed:

The following is a list of Medical Applicants who took the Oklahoma Board of Medical Examination, but since they were graduated since 1933, by rule of the Board, their licenses are withheld until recognized internship shall have been completed. Therefore the following licenses have not and will not be issued until proof of accredited internship is filed. However, those marked with (*) have either completed their internship or were graduated before 1933 and are included in list of Doctors licensed for June, 1934.

Name	Year of Birth	Place of Birth	School of Graduation	Year of Graduation	Home Address or Previous Location
Anderson, Haskell R.	1907	Frederick, Okla.	Univ. of Okla.	1934	Olustee, Okla.
Appleton, Meredith M.	1908	Buffalo, Okla.	Univ. of Okla.	1934	Okla. City.
Blue, Johnny A.	1902	Ree, Texas	Univ. of Okla.	1934	Okla. City.
Boswell, Wm. Eugene	—	Leedy, Okla.	Univ. of Okla.	1934	Okla. City.
*Bynum, W. Turner	1910	Okla. City	Northwestern	1934	Okla. City.
Cantrell, David E.	1906	Banty, Okla.	Univ. of Okla.	1934	Healdton, Okla.
Clark, Ben P.	1910	Longton, Kans.	Univ. of Okla.	1934	Okla. City.
Coker, John Kenner, Jr.	1907	Mt. View, Okla.	Univ. of Okla.	1934	Okla. City.
Criek, Lloyd E.	1891	Preston, Kan.	Univ. of Okla.	1934	Britton, Okla.
Crockett, Herbert Gillis	1907	El Reno, Okla.	Univ. of Okla.	1934	El Reno, Okla.
Cunningham, Hugh A.	1907	Indiana	Univ. of Okla.	1934	Okla. City.
*DeMotte, Mary A. T.	1902	Phillipsburg, Kan.	Washington Univ.	1930	Ponca City, Okla.
*DeMotte, John Allan	1904	Hopkins, Mo.	Washington Univ.	1930	Ponca City, Okla.
Dunnington, Wm. Glenn	1910	Cherokee, Okla.	Univ. of Okla.	1934	Okla. City.
Evans, Rob't. Erle	1909	Hugo, Okla.	Univ. of Okla.	1934	Okla. City.
Foster, Lloyd G.	1908	Clayton, N. M.	Univ. of Okla.	1934	—
Fry, Powell Everett	1910	Frederick, Okla.	Univ. of Okla.	1934	Frederick, Okla.
Ghormley, James Grant	1901	Kans. City, Mo.	Univ. of Okla.	1934	Okla. City.
Hardman, Thos. Jas.	1910	Tulsa, Okla.	Univ. of Okla.	1934	Tulsa, Okla.
Hargrove, Fred T.	1905	Lockesburg, Ark.	Univ. of Okla.	1934	Antlers, Okla.
Harns, Edwin Martin	1906	Cordell, Okla.	Univ. of Okla.	1934	Okla. City.
*Hetherington, Lloyd P.	1903	Atwood, Kan.	Univ. of Nebr.	1930	Pawnee, Okla.
Holtz, Harvey Everett	1907	Akron, Kan.	Univ. of Okla.	1934	Shawnee, Okla.
Hoot, Melvin Phillip	1909	Arkansas City, Kan.	Univ. of Okla.	1934	Okla. City.
Jenkins, Paul A.	1911	Okla.	Univ. of Okla.	1934	Okla. City.
Johnson, E. Ossip	1908	West Plains, Mo.	Univ. of Okla.	1934	Tulsa, Okla.
Kahn, Bernard	1907	—	Univ. of Okla.	1934	Okla. City.
Keller, Grape E.	1892	Ft. Worth, Tex.	Univ. of Okla.	1934	Okla. City.
Kreger, Glenn Smith	1909	Listie, Penn.	Univ. of Penn.	1933	Okla. City.
Lindstrom, Wm. Carl	1910	Ada, Okla.	Univ. of Okla.	1934	Tulsa, Okla.
Lively, Claude E.	1906	Woodward, Okla.	Univ. of Okla.	1934	Okla. City.
McDonald, Glen W.	1911	Headrick, Okla.	Univ. of Okla.	1934	Okla. City.
Madeley, Howard R.	1909	Stoekton, Calif.	Univ. of Okla.	1934	Okla. City.
Masters, Herbert Alfred	1909	Watonga, Okla.	Univ. of Okla.	1934	Chickasha, Okla.
Maupin, Clinton S.	1908	Waurika, Okla.	Univ. of Okla.	1934	Okla. City.
Morgan, Vance Frederick	1909	Foster, Okla.	Univ. of Okla.	1934	Okla. City.
Morris, David Gordon	1903	Kansas.	Univ. of Okla.	1934	Healdton, Okla.
Nelson, James M.	1905	Doyle, Ark.	Univ. of Okla.	1934	Okla. City.
New, William Neil	1904	Atoka, Okla.	Univ. of Okla.	1934	Guthrie, Okla.
Owen, Cannon Armstrong	1909	Magnolia, Ark.	Univ. of Okla.	1934	Okla. City.
*Paulson, Alvin W.	1907	Dill Rapids, S. D.	Washington Univ.	1932	Okla. City.
Robberson, Morton E.	1910	Okla.	Univ. of Okla.	1934	Wynnewood, Okl.
Siebold, George Joseph, Jr.	1909	Olney, Ill.	Univ. of Okla.	1934	Okla. City.
Shelton, Joel	1903	Granite, Okla.	Univ. of Okla.	1934	Okla. City.
Shirley, Edward T.	—	Crystal City, Tex.	Univ. of Okla.	1934	Wynnewood, Okl.
*Shorbe, Howard Bruce	1909	Coalgate, Okla.	Northwestern	1934	Okla. City.
Silverthorn, Louis E.	1904	Forest, Ohio.	Univ. of Okla.	1934	Okla. City.
Smith, Haskell	1909	Dustin, Okla.	Univ. of Okla.	1934	Okla. City.
Smith, Virgil D.	1910	Silverdale, Kan.	Univ. of Okla.	1934	Okla. City.
Spann, Logan A.	1905	Arkansas.	Univ. of Okla.	1934	Okla. City.
Starkey, Wayne Anthony	1906	Martha, Okla.	Univ. of Okla.	1934	Shawnee, Okla.
Stephens, Frank Gordon	1910	Sapulpa, Okla.	Univ. of Okla.	1934	Okla. City.
Stewart, Osear Wilhelm	1907	Olustee, Okla.	Univ. of Okla.	1934	Okla. City.
Talley, Edward Evans, Jr.	1905	Driftwood, Okla.	Univ. of Okla.	1934	Okla. City.
Taylor, John Robert	1905	Hugo, Okla.	Univ. of Okla.	1934	Okla. City.
Ungerman, Arnold H.	1909	Leavenworth, Ks.	Univ. of Okla.	1934	Okla. City.
Vanlandingham, Homer W.	1905	Okla.	Univ. of Okla.	1934	Okla. City.
Wallace, DeLoss Arnold	1902	Cedar Vale, Kan.	Univ. of Okla.	1934	Okla. City.
Waters, Claude Bryan	1907	Pawnee, Okla.	Univ. of Okla.	1934	Okla. City.
Waters, Floyd L.	1908	Marmamee, Okla.	Univ. of Okla.	1934	Okla. City.
White, James Halley	1906	Salt Lake City, U.	Univ. of Okla.	1934	Wewoka, Okla.
Williams, Guy Herson	1908	Norman, Okla.	Univ. of Okla.	1934	Norman, Okla.
Wolff, Eugene G.	1901	Waukomis, Okla.	Univ. of Okla.	1934	Waukomis, Okla.
Zeigler, Joel	1900	Oakhurst, Tex.	Univ. of Okla.	1934	Okla. City.
Zeigler, Paul	1901	Shamrock, Tex.	Univ. of Okla.	1934	Okla. City.

THE JOURNAL

OF THE
OKLAHOMA STATE MEDICAL ASSOCIATION

VOLUME XXVII

McALESTER, OKLAHOMA, SEPTEMBER, 1934.

NUMBER 9

VAGINAL HYSTERECTOMY

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OKLAHOMA CITY

In the minds of many, vaginal hysterectomy is associated with memories of operative hemorrhage, urinary or fecal fistulae, and vaginal herniation. Others retain thoughts of the application of large crushing clamps, to be removed in forty-eight hours, and the wound allowed to heal by slough and secondary intention.

Refinements in technic and careful selection of cases have greatly altered this situation, and vaginal hysterectomy is definitely the procedure of choice in a small percentage of the cases requiring hysterectomy. However, it is well to add that the performance of this operation requires greater skill, more thorough knowledge of pelvic anatomy, and more experience than does the average abdominal hysterectomy.

The abdominal operation, for reasons of greater exposure, is certainly to be preferred in the large majority of cases needing hysterectomy. However, certain advantages to the vaginal approach give vaginal hysterectomy a small but distinct field of usefulness, which should not be denied.

DISADVANTAGES ASSOCIATED WITH VAGINAL HYSTEREC- TOMY

1. *Small Operative Field.* This is a distinct disadvantage. However, it is greatly diminished by proper retractors and assistants. With this preparation, the operative field is adequate for each step of the operative procedure, but the exposure must be changed frequently as the operation advances. This differs from the abdominal operation where the actual area of operative procedure is small, but the exposure of the entire operation is main-

tained throughout. Therefore, the smaller exposure, while a definite disadvantage, is not so great as supposed if the operation is performed in an orderly manner with the assistance of good retraction.

2. *Operative Hemorrhage.* In the modern operation, hemorrhage from the broad ligament is controlled either by primary suture ligation or by clamp and ligation. If these sutures are cut and the stump of the broad ligament allowed to fall back into the peritoneal cavity, control of subsequent possible hemorrhage becomes a difficult, rather blind procedure. These sutures must be fixed so as not to slip and be held, preferably with different types of forceps for different parts of the broad ligament for purposes of identification. If this is done, even with unexpected operative hemorrhage, each broad ligament stump may easily be exposed in its entire length and areas of hemorrhage controlled by suture.

To overcome the dangers of postoperative hemorrhage, the peritoneum is closed above the stumps of the broad ligament, with all the possible areas of broad ligament hemorrhage to be in the vagina. If hemorrhage should occur, vaginal packing will control it.

Thus, while hemorrhage in the vaginal operation is a greater danger than in the abdominal route, these simple tricks of technic make it negligible.

3. *Injury to Bladder, Rectum and Ureters* is a dangerous possibility which exists in the performance of complete hysterectomy either vaginal or abdominal. With as thorough an understanding of the vaginal operation as the abdominal, it occurs no more frequently. Injuries to these

structures take place either because of their distortion by the pelvic pathology or because of hurried and blind attempts to control hemorrhage with accidental injury. Proper selection of cases, thorough understanding of the anatomy, and knowledge of the tricks of technic make such injury possible but only rarely as in abdominal surgery.

4. *Herniation of Vagina Afterward* is rarely seen with the modern procedure because of the following precautions:

(a) Mobilization of bladder and suture of upper part of the broad ligament to pubo-cervical fascia and anterior vaginal wall beneath bladder, allowing the bladder to be supported in the sling so formed.

(b) Suture of broad ligament stumps together

(c) Suture of utero-sacral ligaments together.

(d) Colpoperineoplasty to form a protective bridge posteriorly.

5. *Disease of Tubes and Ovaries*. Pathology of tubes and ovaries is much better handled from the abdominal approach. Some enthusiasts even recommend vaginal operation for ruptured ectopic pregnancies. It would seem apparent that this is unwise. Simple adnexal disease, encountered in vaginal hysterectomy, may be easily managed, but it is not the route of choice for pathology of the tubes and ovaries.

6. *Size of Uterus*. There are schemes for taking out per vagina uteri, large enough to reach the umbilicus, in a piecemeal manner. However, the very large uterus is a contraindication to vaginal hysterectomy unless there is tremendous advantage in so doing.

7. *Pelvic Adhesions* offer dangers in the vaginal approach and should contraindicate choice of this route. With care, vaginal hysterectomy may be satisfactorily performed with dense pelvic adhesions, but it is more blind and dangerous than the abdominal route and a grave disadvantage.

8. *Co-existence of Other Intra-abdominal Pathology* makes abdominal operation preferable, if it is not contraindicated.

THE ADVANTAGES ASSOCIATED WITH VAGINAL HYSTEREC- TOMY

1. *Less Shock and Less Anesthesia*. There is surprisingly little operative re-

action from vaginal hysterectomy, particularly as compared with the abdominal operation. If general anesthesia is used only a very small amount is employed, as muscular relaxation is unnecessary. Local infiltration with novocaine offers excellent anesthesia for vaginal hysterectomy, and can be used where general anesthetic is not indicated.

These three things, less operative shock, reduced general anesthetic and satisfactory local infiltration novocaine anesthesia, are the greatest advantages of vaginal hysterectomy over the abdominal route. It makes this procedure desirable in the poor surgical risk, and in older and weaker patients, where abdominal operation would be a hazardous procedure. However, it must be pointed out that with modern aids, such as transfusion, many poor surgical risks may be greatly improved by proper preoperative preparation. Vaginal hysterectomy, nor any other operative procedure, is a substitute for as adequate preparation as possible.

2. *Ideal Operation in Complete Prolapse*, because it allows easy access to the structures which need repair. The bladder is supported in a sling made by the broad ligaments, the stumps of the broad ligaments sutured together, the utero-sacral ligaments approximated and a high colpoperineoplasty done.

This advantage is especially true in the small senile type uterus with greatly elongated prolapsed cervix.

3. *Shorter Morbidity* and earlier return to normal life makes it desirable.

4. *Avoidance of Disagreeable Symptoms of the Abdominal Operation* is advantageous. The patients after vaginal hysterectomy have little postoperative discomfort, usually no more than after simple perineorrhaphy.

5. *No Abdominal Scar and Few If Any Peritoneal Adhesions* make this procedure desirable.

6. *No Contamination Peritoneal Cavity by Carrying the Cervix Across It*. While this is given as an advantage, it is our opinion that complete abdominal hysterectomy, carefully performed, will avoid such contamination.

THE INDICATIONS FOR VAGINAL HYSTERECTOMY may vary with experience and technical skill of the operator, but the following conditions must be considered:

1. *Uterine Prolapse*. None of the con-

traindications existing, vaginal hysterectomy is particularly adaptable in the two following situations:

(a) Complete prolapse of the senile uterus with cystocele and rectocele, for reasons given above. We know of no other operation which equals it in this condition.

(b) Prolapse and vaginal relaxation in women of the late child-bearing period, who require hysterectomy for other causes, such as menorrhagia or small fibroids. This is especially true if a chronically inflamed cervix also exists.

2. *Carcinoma of Corpus Uteri.* This has been considered by some as an indication for vaginal hysterectomy. The reason given by its advocates is less contamination of the peritoneal cavity. There is one grave difficulty to its application. Cancers of the corpus tend to extend into the uterine adnexae, which can be much more radically attacked from the abdomen. The fact that the soft corpus can be more gently handled by abdomen, a distinctly favorable factor in cancer, is also to be considered against the vaginal approach.

3. *Menorrhagia At or Near Menopause.* When blood loss makes permanent cessation of uterine bleeding imperative there are three choices in available procedure: abdominal hysterectomy, radiation and vaginal hysterectomy.

In a selected group, curettage and radiation is very satisfactory, largely due to short morbidity and reduced economic inconvenience. It has the great handicap in that there are so many contra-indications to its use that careful selection will eliminate all but a small per cent, if one wishes entirely satisfactory results. It has the additional disadvantage of destroying any remaining ovarian activity.

Abdominal hysterectomy remains preferred in the majority of these cases.

However, where the contra-indications to vaginal hysterectomy do not exist, it is an ideal procedure in those cases which should not be treated by radiation.

4. *Fibromyomata.* For reasons of greater exposure almost all of these cases should have abdominal operation, except where the principal condition is a prolapse or menorrhagia and small fibroids are incidental.

THE CONTRA-INDICATIONS TO VAGINAL HYSTERECTOMY

1. Major pathology of tubes and ovaries.
2. Very large uterus.
3. Pelvic adhesions.
4. Co-existent intra-abdominal pathology.

CONCLUSIONS

1. The technic of vaginal hysterectomy has been greatly refined.
2. This has tended to minimize the objections of small operative field, possible operative hemorrhage, possible injury to bladder, ureters or rectum, and subsequent herniation of vagina.
3. The distinct disadvantages and contra-indications to vaginal hysterectomy are major pathology of tubes and ovaries, the very large uterus, pelvic adhesions, and co-existent intra-abdominal pathology.
4. Advantages of vaginal hysterectomy are less operative shock, less necessary anesthesia, excellent approach for repair prolapsed uterus, shorter morbidity, absence of disagreeable symptoms of abdominal operation, no abdominal scar and fewer peritoneal adhesions.
5. Vaginal hysterectomy is a particularly valuable procedure for the poor surgical risk and older and weaker patients who require hysterectomy.
6. Indications for vaginal hysterectomy are the following, if above contra-indications are not present:

(a) Prolapse of uterus, particularly complete prolapse of senile uterus; and prolapse and vaginal relaxation in women in the late child-bearing period, who require hysterectomy for other causes, such as menorrhagia or small fibroids.

(b) Menorrhagia at or near the menopause where blood loss requires permanent cessation of uterine bleeding, and in whom radiation is not advisable and the contra-indications to vaginal hysterectomy are not present.

7. Abdominal hysterectomy still remains the procedure of choice in removing the uterus in the great majority of cases, but there is a distinct field for application of the vaginal operation.

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I think this is a very important and timely paper. It is especially important at this time, since there seems to be a recrudescence of the vaginal route operation, and in this return of the swing of the pendulum, sight is lost of the indications and the contra-indications for this step.

This paper is an excellent summary of the whole procedure—it is, in fact, a warning that vaginal hysterectomy has a very limited field and that the surgeon undertaking it must be fully acquainted with the contra-indications, as well as the indications; that he must be completely equipped as to a full understanding of the anatomy and then must know the technique so well that he can accomplish all of the minute details of the operation.

Let me quote: "Refinements in technique and careful selection have altered this situation, i. e., operation, hemorrhage, urinary or fecal fistulae, vaginal herniation, and vaginal hysterectomy is definitely the procedure of choice in a *small* percentage of the cases requiring hysterectomy." However, it is well to add that the performance of this operation requires greater skill, more thorough knowledge of pelvic anatomy and more experience than does the average abdominal hysterectomy. I cannot help but quote the remark made by one of my preceptors whom I had assisted many times in doing vaginal hysterectomy. He said to me: "Doctor, as I grow older I find fewer and fewer indications for vaginal hysterectomy, and I know now that many of the cases we did while you were my assistant might have been better served by abdominal hysterectomy."

Let me call to your mind some other important matters relating to the choice of this operation. *Preoperative diagnosis* must be exact. Here, there can be no such thing as a slipshod, incomplete and inexact method, as is so commonly seen. Ask yourself: Are there generalized pelvic adhesions, with possibly angulations of the intestines requiring careful attention? Is there an appendix incarcerated with a tube or ovary, which when liberated may flare up and require an abdominal operation to save life? Are you going to be able to utilize the omentum as a covering for denuded surfaces? Are you sure that you have firm enough ligamentous supports so that you can restore the pubo-sacral

sling? And finally, are you absolutely certain that all of the patient's symptomatology is due to the condition for which vaginal hysterectomy is proposed?

Let me recite again the major contra-indications:

1. Major pathology of tubes and ovaries.
2. Very large uterus.
3. Pelvic adhesions.
4. Co-existent intra-abdominal pathology.

The choice of this operation must be made only by the fully experienced and fully equipped surgeon, and my thought in the final analysis is that "surgery cannot stand many more batterings and rebuffs, if we are to apply our art for the betterment of mankind." Badly chosen and poorly executed surgical operations have done more to discredit surgery than any other factor, and we must all see to it that discrediting conditions are stopped as soon as possible.

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AGRANULOCYTIC LEUKOPENIA: REPORT OF CASE SUCCESSFULLY TREATED WITH X-RAY AND SOME OBSERVATIONS ON EFFECT OF AMIDOPYRINE

Julien E. Benjamin and Joseph B. Biederman (Journal A. M. A., July 21, 1934), report a case of agranulocytosis which was apparently amenable to high voltage roentgen therapy. During a period of good health the patient was given 10 grains (0.65 Gm.) of amidopyrine under control. This produced all the symptoms of agranulopenia within forty-eight hours. The administration of acetylsalicylic and allyl-isopropyl-barbituric acids caused no unfavorable symptoms. Intracutaneous, patch and passive transfer tests gave negative reactions. In this patient the effect of amidopyrine was not one of an atopic nature but of hyper-sensitivity to the drug with the hematopoietic system acting as the shock organ.

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A RATIONAL, NONSURGICAL TREATMENT FOR INTESTINAL FISTULAS

Frank R. Guido, Visalia, Calif. (Journal A. M. A., June 30, 1934), states that the persistence of intestinal fistulas is due to the proteolytic action of trypsin. Upper intestinal fistulas heal spontaneously only on rare occasions. High intestinal fistulas alone result in marked changes in the blood chemistry due to fluid losses and chloride depletion. The use of dressings soaked in tenth normal hydrochloric acid will neutralize the alkalinity of the intestinal juices and thus inhibit tryptic activity, resulting in closure of the fistula. The risk and poor results of operative intervention is eliminated by the use of tenth normal hydrochloric acid. The Potter method of treatment of intestinal fistulas is based on physiologic principles; it is without danger and should be tried in all cases.

SEPTICAEMIA

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Since the time of Hippocrates we have been studying the major problem of blood stream infections and yet the mortality rate at the present time is something over seventy per cent. This statement may explain the necessity and timeliness of a discussion at this time. Although many of the factors relative to this subject are controversial, a brief consideration of the prevalence of the condition and the results we are obtaining in its treatment, will convince the thoughtful individual that there is some need for a more thorough consideration, more definite understanding, and a crystallization of the many ideas of treatment in the hope that better results may be forthcoming.

In this discussion the term septicaemia will be taken to mean the condition wherein we find viable micro-organisms in the blood stream or evidence of the effects of their activities on the various systems of the body. It shall not include the often-termed "medical infections," such as typhoid fever and pneumonia, as well as "la grippe," which likewise is a septicaemia. For the purpose of clarity and brevity, only pyogenic infections will be considered. Many times there is a confusion of terms evidenced in such a presentation as this. It seems that this is due to a similarity in terms such as bacteraemia, pyaemia, sapremia and the like. All of these should be separated and distinguished at the outset in order to avoid confusion. By the term bacteraemia, we mean that certain micro-organisms are circulating in the blood stream; these need not be manifesting symptoms, however. Some authorities add the requisite that they should be also multiplying in the blood stream. I am at a loss to know how we are to determine whether or not they are really multiplying. Toxemia means that circulating toxins are present in the blood stream—a very, very common condition, by the way. Pyaemia means that there are infected emboli broken off, from areas of thrombophlebitis for instance, and that these may lodge anywhere in the body. Finally, by sapremia we mean the pres-

ence in the blood stream of elements which have been absorbed from necrotic tissue.

The most common bacteria which are found in the blood stream are the staphylococcus, the streptococcus and the colon bacillus. The meningococcus and the gonococcus may be isolated but much more rarely than the first mentioned. The human body, constructed as it is, possesses certain barriers to infection and to the invasion of pathological bacteria. The skin and mucous membranes are the first lines of resistance to invasion; therefore, when there is any break in these natural lines, we have the danger of further invasion of deeper structure and eventually entrance into the blood stream. It is this more or less typical course of phenomena which immediately initiates the protective reaction of the body forces. In the event that the body cannot respond effectively or completely we have conditions right for the production of the disease. It is believed therefore that septicaemia arises as a result of the combined synergistic conditions—broken natural barriers and lack of resistance on the part of the host; that is to say, a paralysis of the resisting mechanism.

This resisting mechanism primarily concerns the reticulo-endothelial system which has the ability and the power to combat such infections as those described. That it often does so without the production of signs and symptoms of disease, is quite evident, since, were this not true, the prevalence of septicaemia would be markedly increased. When the defense mechanism is adequate, such signs and symptoms are entirely absent or are very transitory. As evidence of this statement, consider the onset of primary osteomyelitis when the disease is first manifested following a trauma which creates an area of decreased resistance without any break in the barriers whatsoever. There must naturally be then pathologic bacteria present in the blood stream prior to the trauma, which have gone unrecognized.

From the foregoing, it may be seen that

septicaemia of itself cannot be an original condition but always must act as a complication of some original disease or injury. It is quite true that many times the original portal of entry has been so minute and trivial that no attention is given it and that only the initial chill and fever calls attention to the fact that the individual has been affected by the occurrence. We may be called on to treat septicaemia from three distinct aspects, namely: First, infected accidental wounds; second, accompanying idiopathic infection such as cellulitis, and third, through operations on infected areas.

In dealing with either or all of these aspects there is one startling and sudden occurrence which should immediately put us on guard against the invasion of the offending micro-organism—that is the chill. Under any conditions, the occurrence of a chill should not be lightly passed over, but its appearance is always of the utmost concern to the surgeon. It very strikingly and decisively tells us that there is trouble ahead in the treatment of septicaemia. There is no aid to be derived from a consideration of the period of incubation since that may be from a few hours to several days and in its variance lies its weakness as a dependable sign. Fever of course immediately follows or accompanies the rigor and with it there appears the usual generalized aching of the muscular system, and the feeling of weakness and discomfort. Should there be any doubt following the appearance of such a trend of symptoms, the later appearance of petechial hemorrhages of the skin will tell the story beyond doubt. These hemorrhages are not confined to the skin as a rule but appear also on the serous surfaces and in the lining of the intestinal tract. The petechia first appear in the bend of the elbow and then appear over the chest and the abdomen. The characteristic element of the fever is its daily remissions and occasional intermissions—this with the profuse sweating is quite characteristic of the septicaemia fever. Toward the middle of the course of the disease, marked delirium appears although characteristically enough in staphylococci septicaemia, we may have a very clear sensorium until at or near the end of life. Physical examination shows the liver and spleen both enlarged—the latter in all likelihood due to an effort to throw effective blood cells into the circulation to combat the infection. Excessive sweating, anorexia, and loss of weight are likewise characteristic signs.

It is in the examination of the blood that the final definite proof of the correct pathologic diagnosis is found. Clinical septicaemia may be seen with a constantly negative blood culture. One cannot be certain from a pathological sense unless the blood culture is positive for these various bacteria. This laboratory procedure may consume as much as twenty-two hours in the test but certainly one should not delay adequate supportive measures in the meantime. The blood count in itself is important—not so much as to the total number of reds or whites but in respect to the round cells in particular. In these cells we have some idea of the resistance of the host. When the round cells are adequate, it is an indication that the resistance is good; when they are decreased the opposite is true. Faced with a falling count in the total of these cells, the prognosis immediately becomes less hopeful. It should be pointed out here that the colon bacillus infection characteristically gives a low white count. In this we must be on our guard lest a diagnosis of active tuberculosis be made, especially the acute miliary type.

Of the various types which have been mentioned, it is quite true that the staphylococci infections give the worse prognosis—next the various streptococcus strains and finally the colon bacillus infections will give the best prognosis. The first usually arises from some skin lesion which has been entirely untreated or improperly treated. Strept infections follow criminal abortions, angina and the like. The source of the colon bacillus infection is usually from the bowel or from bowel contaminations.

Now, in respect to treatment: In this, like in numerous other diseases, the best treatment after all is in prevention. Insofar as septicaemia is concerned this simply means keeping individual general and local resistance to the maximum point. It also implies that proper local treatment should be administered every break in the first line of resistance. Especially is this true in accidental wounds—where even the most trivial break should be regarded as a potential source of septicemia and be therefore completely and properly sterilized. In the treatment of infected wounds, and especially cellulitis, the characteristic restraint of the physician should be cultivated. Care should always be taken in the incision of localized infections that the pyogenic membrane be not incised since to do so would immediately break down

the limiting wall which nature has provided against the spread of infection.

In general we may say that any course of treatment should not be judged in one or two cases, since if such is true we may get satisfactory reports from the most bizarre methods and remedies. Just recently a journal published the results in the treatment of three cases (all favorable) and then added that in order to prove adequately the efficacy of any method one should treat the same type of infection in twins! The obvious impossibility of this as a practical test need not be emphasized.

Supportive treatment, consisting of intravenous glucose, high caloric diet, whiskey, subcutaneous saline and blood transfusions will do more good than any specific form of treatment. In the case of the whole blood transfusions we have not only a general remedy but also a specific stimulation of defense mechanism by the addition of blood salts and healthy cells from the reticulo-endothelial system. The effect of the various dyes and alcohol administered intravenously is on the defense mechanism of the body and decidedly not as sterilizing agents in the blood stream itself. It is not quite logical to assume that any agent of sufficient strength to kill bacteria in the blood stream would leave the individual blood cells unharmed.

Most recently the so-called immune therapy has been more prominent in the discussions of treatment of this condition. The use of the various specific sera is productive of such variable results that they are to be regarded as of undetermined usefulness at the present time. The so-called immune transfusions gives to the recipient whole blood which has been fortified by the vaccination of the donor with the specific organism which has been isolated from the patient's blood. This procedure is worthy of more study and trial than has been given it in this locality. Again, the use of bacteriophage appears to have in it some elements which may bring excellent results providing that the specific phage can be grown before the need for it no longer exists. The statement should be again made that the fortunate summation of natural resistance often turns the tide in favor of the patient and the particular remedy used at that time gets the credit for the cure.

In the past fourteen years there have been admitted to the University and St. Anthonys hospitals at Oklahoma City a

total of 268 cases of septicaemia; of this total there has been 180 deaths, or a mortality of 67 per cent. These cases were divided in the following manner: Fifty-one cases of puerperal sepsis with twenty-six deaths, a rate of 58 per cent; forty-one cases of peripheral infections such as cellulitis, furuncles and carbuncles with twenty-nine deaths, a rate of 70 per cent; peritoneal abscesses principally appendiceal in origin twelve cases with ten deaths, a rate of 83 per cent; pelvic abscesses and other so-called internal abscesses, fifteen cases with thirteen deaths, a rate of 86 per cent; mastoid infections, seven cases with two deaths, or a rate of 28 per cent; thirty-five cases of osteomyelitis with thirty-one deaths, or a rate of 88 per cent; infections of the kidney, eight cases with one death, or a rate of 12 1-2 per cent (the lowest of all); five cases of angina with four deaths, a rate of 80 per cent; five cases of arthritis with four deaths, a rate of 80 per cent; thirty-seven cases of unknown primary pathology with sixteen deaths, a rate of 43 per cent, and one of empyema, two of Vincent's disease and three dental infections, all with a mortality rate of 100 per cent.

As a result of this discussion and these rather terrible figures, it would seem that the study of septicaemia is entitled to more effort and concentration than it has received in the past.

304 Osler Building.

R. B. DAVIS COCOMALT

Investigators who have made a special study of fatigue and general debility report that these conditions generally can be corrected by proper diet and rest.

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FASCIAL SPACE and BURSAL INFECTIONS of THE HAND

FRANK L. FLACK, M.D.

TULSA

When the usefulness and value of the hand is considered, the justification for a paper dealing with some of the common infections is reasonable. The hand, with the possible exception of the central nervous system, is perhaps the most complicated anatomically of any region of the body. A working knowledge of this anatomy is a *sine qua non* for the correct diagnosis and treatment of hand infections. The frequency and seriousness of hand infections has not been given sufficient attention. This is probably due to the fact that, regardless of the percentage of disabilities, these cases rarely die. An analysis of the records of the Industrial Board of Oklahoma shows that in 60,583 partial disabilities, 20 per cent are due to injuries and infections of the hand, and that in 884 complete disabilities 58 per cent are due to the same cause. A stockyards plant in Chicago reports 75 per cent of their hand disabilities follow infection and a large accident insurance company states that 20 per cent of their total hand liabilities arise from the same cause. In this short paper only fascial space infections will be considered. Subcutaneous infections, hang nails, and other common infections will not be discussed. Complete text books such as Fifield's, Kanavel's, and others have been written on this subject. I have nothing new or original to offer; I only intend to review some of the points in anatomy that have helped me in treating these cases.

The anatomy of the hand is complicated and is a large subject in itself. For a general working basis some of the elementary anatomical features may be mentioned. The functional value of the hand depends upon complete use of the median, ulnar, and radial nerves, a proper blood supply, the free motion of the tendons and muscles, and an intact bony system. The flexor tendons are the most important and are supplied by the median and ulnar nerves. The principal fascial spaces and bursae are the closed spaces about the terminal phalanges, the thenar space, the middle palmar space, the web spaces, the Parona's space, the ulnar bursa, and the radial bursa.

The most common infection in my experience has been an infection of the distal closed space. The peculiar anatomical arrangement of this space is of the greatest importance. Dense fascia encloses it on all sides. Radiating pieces of fascia extend from the periosteum to the skin dividing it into many separate compartments. A digital artery goes through this space on each side of the last phalanx. However, the entire phalanx is not shut off by these fibrous septa. The part that corresponds to the diaphysis is a closed space and the portion of the phalanx proximal to that is an open space. When infection occurs in this space oedema supervenes, thrombosis of the veins follows, and the blood supply is shut off. This results in a destruction of the diaphysis and it occurs rather rapidly.

Diagnosis: An infection in this space produces the usual signs of inflammation. The finger becomes red, hot, hard, and painful. The swelling is usually not so great because dense fascial tissue everywhere surrounds this area. The pain is, as a rule, throbbing in character. Pus may be present before fluctuation can be elicited. This is what is commonly called a felon. However, the formation of it is usually not due to a collection of pus starting under the periosteum but is more frequently due to a subcutaneous infection extending between these fibrous septa. It is quite well known that fluctuation is present in the pulp of a normal finger. Naturally, an early incision to relieve the tension, drain the pus, and save the blood supply is necessary. This incision should be made on the side or sides of the finger because in this way we are able to cut through these septa and secure proper drainage. No longer are incisions made through the middle of the finger because they do not produce efficient drainage; they cause a tender scar on the pressure bearing area, favor prolapse of tendons, and destroy the efficient sensory plexus of nerves on the palmar surface. It is to be remembered, however, that tendon sheaths are attached to the bases of the distal phalanges. For this reason the incisions must not extend far enough prox-

imal to open the tendon sheath as this would result in a purulent tenosynovitis and a spread of the infection to the other communicating spaces.

Thenar Space Infections: The thumb is, of course, the most important digit of the hand. Rarely should the thumb be amputated because, regardless of how stiff the thumb may be, it still has function. It can practically always be used as a point of opposition. This is not true of the fingers, which frequently must be amputated because they are in the way. Next to the thumb in value as a digit is the index finger. The diagnosis and treatment of infections of the thenar space are understood only as the anatomy in the region of the thumb and index finger is known. The thenar space, which is, of course, a potential space, is on the outer side of the metacarpal bone of the middle finger. Posteriorly are the adductor muscles; in front are the flexor tendons, the palmar fascia, the flexor longus pollicis tendon and the short muscles of the thumb. This space extends almost to the lower border to the anterior annular ligament proximally.

Diagnosis: Infections of the space usually follow penetrating wounds. It may be secondarily to an extension from a middle palmar space abscess. The most frequent cause, however, is the extension to this space along the lumbrical canal of the index finger. The lumbrical muscles are surrounded by potential spaces or canals. Each lumbrical muscle arises from a tendon of the flexor profundus digitorum. The sheath surrounding the lumbrical muscle communicates with the sheath of the flexor tendon. The route the pus follows is that it ruptures through the proximal end of the sheath of the index finger into the space surrounding the lumbrical canal of this finger and then extends into the thenar space, the thenar space having an extension into the first lumbrical canal. The characteristic and principal finding is extensive swelling of the thenar eminence. The extent of this swelling is greater than that of an infection of the palmar space because the fascia covering the thenar space is the thinnest portion of the palmar fascia. Edema on the back of the hand is extensive. This is accounted for by the fact that the course of the lymphatics is directly toward the back of the hand. Movements of the thumb and index finger in uncomplicated thenar abscesses are comparatively painless. The reason for this is that no tendon sheath

is involved or distended with pus. The treatment of this condition is incision and drainage. All the muscles of the thumb, with the exception of the adductor pollicis, are supplied by a motor branch of the median nerve. If an incision were to be made directly over the site of the greatest finding, quite naturally the motor branch of the median nerve would be severed.

A dorsal incision should be made parallel with and just to the radial side of the second metacarpal bone. From this incision forceps are inserted through the adductor transversus and drainage established by the use of a piece of rubber glove. This incision has the additional advantage of providing drainage for the dorsal thenar space which frequently becomes infected, due to pus extending over the outer side of the adductor transversus muscles. This also has the advantage of leaving no scar on the palmar surface of the hand.

Middle Palmar Space: The middle palmar space lies dorsal to the flexor tendons. The flexor tendons, their accompanying lumbrical muscles and the ulnar bursa are separated from the middle palmar space by a thin sheath of fibrous tissue. Very important anatomically is the relation of the lumbrical muscles and the canals corresponding to the middle, ring, and little fingers. The canals of the lumbrical muscles are potential spaces and form channels from the tendons of the flexor profundus to the radial sides of the dorsum of the hand where they are inserted. Also, they are closely connected with the web spaces between the fingers and may carry infection from the tendons to these web spaces. When pus in a lumbrical canal ruptures, the infection spreads upward when connected with the middle, ring, and little fingers, to the middle palmar space. When connected with the index finger, it spreads to the thenar space. It has frequently been demonstrated that radio opaque material, when injected under pressure into the middle palmar space, is continued into the lumbrical sheaths of the middle, ring and little fingers.

Diagnosis: Infection in this space results most frequently from crushing injuries, perforating wounds, or from infections extending along the lumbrical muscles of the third, fourth, and fifth fingers. Many other less frequent methods of infection exist. The usual signs of con-

stitutional involvement frequently are found. The edema present obliterates the concavity of the hand. Dorsal edema is extensive. We must, however, consider that the lymphatic extension is directed to the back of the hand and that edema is common and pus formation is rare. Incisions for drainage of the dorsum are seldom justified.

Treatment: Due to the fact that infection of this space is most frequent following infections of the lumbrical canals, the primary incision should be one aimed to drain the lumbrical space. When the hand is actively and forcibly extended, elevations appear between the fingers. This is due to the fact that the dense strips of palmar fascia are inserted into the digits between the lumbrical spaces. In the intervening spaces between these areas of palmar fascia the lumbrical canals project. Using this as a guide, an incision is made in the gap between the middle and little fingers in order to disclose the lumbrical muscle in its space. A blunt instrument is then passed along this lumbrical canal into the middle palmar space and the pus drained. A piece of rubber tissue is inserted. Of course, rubber tubing is never used for drainage in the hand. Gauze is better for the reason that gauze promotes the formation of fibrous tissue and healing whereas rubber drainage promotes an exudation with the formation of a wall around the rubber drainage and delays healing. Occasionally, it is advisable to open the other lumbrical canals and secure drainage.

Webb Spaces: Between the bases of the proximal phalanges is a considerable amount of loose connective tissue. The lumbrical canals, in their course from their origin from the flexor profundi tendons to their insertion into the extensor tendons, pass through these spaces. In this way the middle palmar space, the thenar space, and the dorsal tissue of the hand are connected. For this reason an infection in the web space is a frequent source of infection in the palmar and thenar spaces. The web spaces are frequent sources of "collar button" abscesses. The treatment of these is adequate drainage.

Parona's Space: Another space of importance is the so-called Parona's space, or the deep forearm space. This space lies anterior to the pronator quadratus muscle and posterior to the flexor muscles; it is above the annular ligament and extends from just above the annular ligament approximately one-half of the way

to the elbow. Infections in either the radial or the ulnar bursa, when not properly drained, rupture through the proximal ends and into this space. The findings produced by an infection in this area are swelling, redness, tender areas on the flexor surface of the forearm above the annular ligament. Practically always, an infection in the palm has produced this condition. If the abscesses in the palm have been properly incised and drained, an incision should be then made on each side of the forearm at the junction of the lower and middle thirds. This is deepened and extended just above the radius and ulna on either side. A hemostat is then passed through on top of the bones and rubber tissue drainage inserted.

Radial Bursa: The synovial sheath of the flexor longus pollicis tendon is quite extensive and is known as the radial bursa. This tendon runs beneath the muscles of the thumb. The radial bursa, being the sheath covering the long flexor of the thumb, is infected most frequently by the spread of inflammation which has started in this digit.

Diagnosis: Of importance in making the diagnosis is the discovery of a subcutaneous whitlow or puncture wound of the thumb with the signs of inflammation. The thumb is held in position of partial flexion. When the thumb is partially flexed, the space in the tendon sheath is increased to its maximum. This is the natural method of protection against the distention of the sheath by inflammatory material. This is done to relieve the pain. The thumb is enlarged. When efforts are made to extend the thumb, the pressure on the inflammatory material is increased and consequently pain is increased. Pain and tenderness over the anterior portion and over the entire extent of the radial bursa is present. Over the area of the muscles of the thumb there is definite swelling, but this oedema is not as great as in infections of the thenar space. The oedema over the back of the hand is not as great for the reason that the lymphatic supply is not as extensive nor as direct. Rupture through the proximal end of the radial bursa, which frequently takes place, empties the infection and pus into Parona's space of the forearm. For this reason an incision should be promptly made. The primary cause which is usually a thecal whitlow of the thumb should be properly drained by a lateral incision. This incision may then be extended up over the thenar space on its inner side.

To avoid destroying the motor branch of the median nerve supplying the muscles to the thumb, this incision should stop at least one and one-half inches below the distal wrist crease.

Ulnar Bursa: The deep and superficial flexor tendons are covered by a common synovial sheath. This sac is the ulnar bursa and lies principally to the median side of the tendons. The ulnar bursa is divided into three compartments. The most important is the retrotendinous portion. Of particular anatomical interest is the fact that the ulnar bursa is continuous with the synovial sheath of the little finger. In extent it reaches from the last palmar crease to just below the anterior annular ligament. In some instances it is continuous with Parona's space. An infection of the ulnar bursa in the majority of cases probably results from the extension of an infection of the little finger. The proximal ends of the radial and ulnar bursa are close together and separated by a very thin septum. In many cases an infection extends from the radial bursa directly to the ulnar bursa. Of course, perforating wounds and inflammations from other spaces may affect these spaces. The synovial membrane becomes thickened and the products of inflammation are poured out. This is the reason for the rapid production of adhesions in infections of the tendon sheaths. The formation of pus rapidly produces tension and if prompt and adequate incision is not done the tendons slough.

Diagnosis: The diagnostic points are the findings of a thecal whitlow of the little finger, pain and tenderness over the extent of the bursa; anterior swelling is not as prominent because of the over-lying tendons and the dense palmar fascia. Oedema and swelling on the dorsum of the hand is present and pronounced. Pain and inability to flex the fingers result because of the same reasons operative in infections of the radial bursa. Again, as in infections of the radial bursa, an infection of the ulnar bursa may rupture into Parona's space.

Treatment: If a thecal whitlow of the little finger is present, this should first be drained. The incision used to drain this is a lateral incision and may quite well be extended upwards. It may, with safety, be continued to the anterior annular ligament. The deep division of the ulnar nerve is not likely to be injured from this infection.

Lymphangitis: Lymphangitis, in most cases, is really a cellulitis. The most minute lesion frequently produces the most serious types of infections. In examining the case there may or may not be a small abrasion. However, if this is present it is usually surrounded by a red, swollen and tender area. The infection produces not only a lymphangitis but a perilymphangitis. The lymphatic vessels become swollen and are tender and, due to their redness, are easily visible and traced as red streaks running in a proximal direction. These lymphatics in the upper extremity pass with a remarkable degree of constancy depending upon their origin to the epitrochlear glands and the various groups of the axillary glands and often to the glands beneath the clavicle. The glands become swollen and tender. Due to the fact that the glands from the thumb, index, and middle finger drain to the superior glands, the infraclavicular and supraclavicular, a lymphatic infection originating here is more serious than one originating in the ring or little finger where the receiving glands are located lower.

Treatment: The principal thing in treatment is under no circumstances to operate. General treatment for the infection is carried out. The use of Bier's hyperemia by means of a constricting bandage left on for twelve hours, removed for one-half hour, and then replaced for twelve hours is of value. The extremity should be kept in continuous hot packs. I have never seen any advantage from the use of various antiseptics. Occasionally, abscesses develop and these, when they become localized, should be drained.

Illustrative Case: An illustrative case which came under my observation several months ago and one in which the patient possessed sufficient intelligence to give an excellent history, illuminates several points in the question of hand infection. This patient received an injury to his right thumb from having a piece of wire jabbed into the member. This injury was received over the palmar surface of the proximal interphalangeal joint. In this situation over the joint there is practically no subcutaneous tissue and the tendon sheath is just beneath the skin. Frequently in this location there is a hernial protrusion of a tendon sheath. Here is the most likely place to receive a direct infection of a tendon sheath. Four or five days later this man complained of pain and tenderness; the pain was made distinctly worse on flexion of the thumb. At

this time he had developed a tenosynovitis with pus in the sheath. The thumb was enlarged, was held in a flexed position, he could not extend it, and had great pain on passive motion. At this time the treatment would have been to make an incision into the tendon sheath on the lateral side and institute efficient drainage. In a few days the pain subsided. It was quite evident that the pus had ruptured or extended into some place where it had more room. Due to the fact that the radial bursa is the tendon sheath of the flexor longus pollicis muscle, this man, in all probability, had an infection of the radial bursa. Had the infection been in the other fingers, except the little finger, the pus would have burst through the proximal ends of the flexor tendon sheaths either into the middle palmar or thenar spaces. The next symptoms were those of infection of the radial bursa. Constitutional disturbances were added to the condition caused by an infection of the sheath of the flexor longus pollicis tendon with the addition of pain and tenderness over the site of the radial bursa. The patient continued to hold the thumb in a flexed position. At this state the hand should have been treated as outlined for the treatment of infection of the radial bursa. At this time it is quite likely that the tendon sheath had sloughed. The condition again seemed to subside. This was due to a rupture of the pus through the proximal end of the radial bursa into Parona's space. At this time the treatment for infection of Parona's space should have been instituted. The forearm became brawny and painful. About this time he was brought to St. John's Hospital. The constitutional symptoms were marked; his temperature was high; the patient was acutely ill; there was a marked swelling of the hand and forearm and he was delirious part of the time. The infection had ruptured also into the ulnar bursa. From the infection of the ulnar and radial bursa suppurative arthritis and destructive bone inflammation with degeneration of the carpal bones had taken place. An interesting point in the anatomy of the carpal bones is that the intercarpal-carpo-metacarpal and inter-metacarpal sac is common to all the joints in the wrist. In other words, the wrist joint is, practically, one continuous sac so that the infection produced and resulted in a destruction of practically all the carpal bones. The tendons had sloughed and the treatment instituted was an amputa-

tion at the junction of the lower and middle thirds of the forearm.

This case illustrates quite well the continuous spreading inflammation through the various anatomical spaces of the hand. In addition to this, the hand had become stiff in a position of flexion.

If we anticipate the hand will be stiff, we must secure the position of optimum use which would be in position of dorsiflexion at the wrist with all the fingers slightly flexed and slightly separated. One needs only to place his hand in a position of flexion, the so-called Cotton-Loder's position, to see what a handicap results in its use.

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ALUM-PRECIPITATED DIPHTHERIA TOXOID: RAPIDITY OF IMMUNIZATION FOLLOWING ONE DOSE

The results that A. E. Keller and W. S. Leathers, Nashville, Tenn. (*Journal A. M. A.*, Aug. 18, 1934), obtained the injection of one dose of 1 cc. of alum-precipitated diphtheria toxoid indicate that immunity to diphtheria may be produced rapidly. In one group of twenty-three Schick positive children, 60 per cent were Schick negative in fourteen days. In the same group 95.6 per cent were Schick negative in twenty-eight days and 100 per cent in forty-two days after the injection. In another group of fifty-three children 92.4 per cent were Schick negative twenty-two days after receiving one injection of alum-precipitated diphtheria toxoid, 94.3 per cent were negative in sixty days, and 96.2 per cent were negative in ninety days after immunization. The results following immunization with a single dose of alum-precipitated diphtheria toxoid compare favorably with those obtained following two doses of toxoid without alum or toxoid with alum and are much better than those reported following one dose of toxoid without alum and with alum or three injections of standard diphtheria toxin-antitoxin mixture.

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THE THERAPY OF THE COOK COUNTY HOSPITAL

Bernard Fantus, Chicago (*Journal A. M. A.*, Aug. 18, 1934), presents the views of the therapy of fever as it is practiced by the attending staff of the Cook County Hospital. The first aim in the treatment of all fevers is causal therapy: i. e., the discovery of the nature of the exciting cause, and the application of whatever specific remedy there may be to jugulate it. Still, no matter what the name or nature of the causative organism is, the care and general management (regimen) of all fever patients is essentially the same. The article embodies a discussion of the following phases of treatment as it pertains to fever: rest, alimentary hygiene, antipyresis, elimination, relief of distress, combating pyrexial collapse and treatment of convalescence.

INDICATIONS AND CONTRA-INDICATIONS FOR SPLENECTOMY*

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I can open this discussion in no better way than to quote an eminent Scottish surgeon, Professor David P. D. Wilkie of Edinburgh, who, in an article in the *American Journal of Surgery*, in 1931, says: "There are few procedures in surgery which are girt about with such interesting problems as is the operation of splenectomy. The removal of an organ, the functions of which are not yet fully understood and the enlargements of which are beset by such intricate and varied blood dyscrasias, is in every case a fascinating experiment and offers a field for most intimate cooperation between the surgeon and the hematologist."

Inasmuch as the subject I have chosen is entirely too big for a brief discussion, since to cover it adequately one must go into the differentiation of the entire field of blood dyscrasias in which there is splenic involvement; into the differential diagnosis of purpura; and into a careful consideration of diseases of the spleen with splenomegaly, I shall quote again from Dr. Wilkie a terse statement in which I fully concur, and which, in my judgment, covers the entire field, aside from such definite surgical indications as abscess or trauma: "The three conditions in which splenectomy promises real relief are: splenic anemia, hemolytic jaundice, and chronic purpura."

At this point I desire to refer to the cases in which splenectomy has been done in the various hospitals of Oklahoma City, whose administrative officials and staffs have been very generous and courteous in permitting me to study their records for this discussion.

There have been twenty cases in all. Of these, four have been for trauma. All recovered following splenectomy. One of these was a case of myelogenous leucemia; operation had no effect on the blood dyscrasia. This patient died some four years

after operation. There can be no question as to the surgical indications in rupture of the spleen.

Six cases were operated with a diagnosis of splenic anemia or Banti's disease. A study of the records show that three of these were recognized in the stage of splenic anemia, before the fully developed Banti's syndrome had been reached. Two cases recovered; one died of exhaustion and hemorrhage nineteen days post operative.

The other three had reached the stage of cirrhosis, or Banti's syndrome; all died. One of these was complicated by biliary obstruction for a long period and died of exhaustion and cholemia.

These figures would indicate that splenic anemia offers a good prognosis, Banti's syndrome a very bad prognosis with splenectomy.

Three cases of hemolytic interus were operated, one a girl of about six years, a girl of sixteen, and a boy of nineteen. All recovered.

Six cases were operated with a diagnosis of thrombocytopenic purpura. An analysis of the records show three of these to have been chronic or recurrent purpura hemorrhagica with splenomegaly and thrombocytopenia. All recovered. One, a man of near sixty, is well eight years after operation; the other two were operated more recently.

One of the remaining three cases died five days after splenectomy. This case was acute; there was no splenomegaly; no history of recurrence or chronicity; there was a rapidly developing anemia, and while the record is not complete, one is led to recognize this as a case of myeloid insufficiency.

In the other two cases the condition definitely was myeloid insufficiency. Both died.

What, then, are the criteria on which one may base a judgment as to when to

*A clinical lecture given at the sectional meeting of the American College of Surgeons, Oklahoma City, Oklahoma, February 22, 1934.

remove the spleen in blood dyscrasias? May I quote again from the eminent surgeon already referred to, Professor Wilkie: "If by vital staining methods the blood be shown to contain large numbers of reticulocytes or young cells in the presence of well marked anemia with splenic enlargement, we may safely argue that a competent bone marrow is doing its best to make good for excessive red cell destruction and that in the latter process the enlarged spleen is in all probability playing the leading part. If, therefore, we remove the spleen we can hope for a rapid rise in red cell count and corresponding clinical improvement. If, on the other hand, the reticulocyte count is low and the anemia progressive, aplasia of the bone marrow is present and splenectomy offers little chance of bettering the patient's condition." To put it another way, three questions arise: First, is the bone marrow active? This can be determined with great accuracy today. The evidences of active myeloid function are signs of immaturity of the red cells, namely, nucleated cells, and more especially a high percentage of reticulocytes; a relatively normal number of thrombocytes, and a normal or increased granulocyte count.

The second question: Is there any evidence of splenic dysfunction? If there is splenomegaly in the presence of normally functioning bone marrow, with progressive anemia, thrombo-cytopenia, or hemolytic jaundice, one is justified in looking with suspicion upon the spleen.

The third question, if the bone marrow is active, and if the spleen is at fault: Can the patient undergo the operation with a reasonable degree of safety? In this connection I can only say that in my opinion, except in cases of trauma, splenectomy is an elective surgical procedure, and ample time may be taken to prepare the patient adequately.

Now let us examine these cases a little more critically, and apply as much as we can with the information obtainable, the principles which have been laid down above.

First, the group of splenic anemia. Formerly the term "splenic anemia" included a great variety of conditions characterized by anemia and splenomegaly. Gradually, as knowledge has accumulated, more and more of these cases have been placed in other categories, until now the term is reserved for that group of cases of insidious onset, chronicity, splenomegaly, tendency to gastro-intestinal hemor-

rhages, gradually progressive anemia and leucopenia, of unknown etiology; and usually terminating in portal cirrhosis, portal insufficiency and death. If the condition is recognized before cirrhosis develops the diagnosis of "splenic anemia" is made; if cirrhosis is present with portal insufficiency, the term Banti's disease, or better, Banti's syndrome, is applied. Of the six cases I have referred to above, three were cases of splenic anemia without portal incompetency. The results in two of these three were excellent; the other three had progressed to the stage of cirrhosis. These three died. Thus one sees that in this small group, splenectomy in splenic anemia offers a good prognosis; but when Banti's can be diagnosed the outcome is universally bad. This conforms to the observations of others who have had greater numbers to study.

The case I have to present is a thirteen-year-old boy, very anemic, as you can see. In 1926 he had measles, followed shortly by a profuse gastric hemorrhage. Since that time he has had several severe hemorrhages as well as some bleeding from the bowels. He was admitted to this hospital some eight months ago with the history of recent hemorrhage and enlargement of the abdomen. On examination he was found to have the characteristic type of anemia with leucopenia, spleno-hepatomegaly with ascites, characteristic of Banti's syndrome. Paracentesis was done and several liters of transudate withdrawn. Remarkably, ascites has not recurred. We see him today with the following blood picture:

Hb.	60%
RBC	2,780,000
Reticulocytes	5.5%
WBC	3,650
N.	76%

evidencing adequate bone marrow activity. Splenomegaly is marked. Shall we recommend operation? Yes, exploration, although the history of ascites suggests cirrhosis already has occurred. There is now no evidence of portal obstruction; there is enlargement of the left lobe of the liver; and disabling anemia persists in spite of normal erythropoiesis. If the spleen is removable without too great hazard, recalling the ability of the liver to regenerate, one is justified in anticipating a favorable result, even now. Of course the outlook is not as good as it would have been five years ago. One must expect great difficulty at operation in this case because

of the high position of the spleen, and the probability of extensive adhesions.

Von Jaksch's anemia, Gaucher's disease, and perhaps refractory chronic recurrent malaria with splenomegaly, might be placed in the same category with splenic anemia.

The second group of cases, hemolytic icterus, congenital or acquired, will be illustrated by a single brief report.

E. H. A., an eighteen-year-old white male, entered my service January 4, 1932, with a history of continuous jaundice since the age of eleven, punctuated with remissions and exacerbations, the latter associated with severe abdominal pain and digestive disturbances. No family history of importance could be elicited. The condition seems to have had its onset in a severe acute abdominal crisis with jaundice, and the latter has persisted.

Upon examination this boy was jaundiced, anemic, and the spleen was enormously enlarged.

The composite blood picture was as follows:

Hb.	50%-56%
RBC	3,250,000-3,860,000
Reticulocytes	15.3%-18.8%
WBC	6,100-8,200
N.	60%-76%
E.	0%-4%
L.	24%-36%
Thrombocytes	280,000
Coagulation time	5-8 minutes
Bleeding time	2.5-3 minutes
Clot retraction, normal	
Fragility of red cells, increased	
Red cells smaller than normal	

BLOOD CHEMISTRY

N.P.N.	48 mg. per cent
Cholesterol	150 mg. per cent
Serum calcium	12 mg. per cent
Glucose tolerance test 91 mg., 158.8 mg., 136 mg.	
Icteric index	20-35 units
Van den Bergh:	
Direct, no reaction	
Indirect, 5-14 units, 2.5 mg., 7.9 mg.	
Urine essentially normal	
Basil metabolism	plus 14.5

X-ray of bones revealed the characteristic findings of the hemolytic anemias.

The diagnosis was obvious. In view of the continuous ill-health and recurrent severe episodes, and the fact that there were ample evidences of activity of bone marrow as well as excessive activity of the spleen, it was my judgment he should have a splenectomy. My surgical colleagues concurred, and he was transferred to the surgical service of Dr. R. M. Howard who did a splenectomy March 3, 1932. The result was as predicted. By March

10 the red count was normal; on April 1 it reached its peak of 5,820,000; on January 15, 1934, it was 5,390,000. His red cells are still more fragile than normal; the N. P. N. is still slightly elevated, but his general health is excellent. I present him today as an example of what may be accomplished by surgery in this type of case.

An interesting side light on this case is that he is one of the few cases of this condition complicated by genital and skeletal infantilism, and the only one in which both the hemolytic anemia and the infantilism have been corrected. But this phase will form the basis for another report.

Splenectomy has been recommended in the very similar condition of sickle cell anemia of negroes. Both favorable and unfavorable results have been reported; as well as one can determine from the reports, those who have responded favorably have been the cases with splenic enlargement. My small group consists of cases without splenomegaly, and I have not recommended splenectomy; however, as one can offer them nothing better, and as the ultimate prognosis is universally bad, I see no reason why splenectomy should not be offered the victims of this mysterious malady.

It is in the final group, in my opinion, where errors of judgment most frequently occur and tragedies result.

Purpura hemorrhagica is a symptom. In many instances it is associated with thrombocytopenia. This is spoken of as thrombocytopenic purpura. This phenomenon is a frequent accompaniment of the blood dyscrasias; it is the common occurrence in the terminal stages of the leucemias, sometimes pernicious anemia. It is a common manifestation in acute infectious or toxic conditions. It is my opinion, based on observation of a large series of cases, that the patients in whom purpura is associated with the blood dyscrasias mentioned will die, whatever is done; the acute cases associated with infections and toxemias will recover in a vast majority of cases without special treatment, or in spite of it, unless they die of the causative condition. In these cases of symptomatic purpura transfusion is the therapy of choice if any treatment of the hemorrhagic condition is required.

The bone marrow has three functions: The formation of thrombocytes, erythrocytes, and granular leucocytes. Any one.

or two, or all three of these functions may be depressed, and to the extent that they are depressed we are dealing with impairment of myeloid function. Of these functions, that of thrombocytopoiesis is most frequently involved, and fortunately so; for it seems to be the least vital and the one that recovers most quickly and easily. When this function alone is depressed, and to the extent that only 40,000 or fewer platelets appear in the circulating blood, petechial hemorrhages are likely to appear. For the most part these cases recover spontaneously, without treatment, or with transfusions.

If one or the other of the remaining functions of the bone marrow be involved the condition becomes more serious. There may be a progressive anemia with low percentage of reticulocytes as well as absence of other signs of activity of the bone marrow. This means a grave situation and indicates definitely myeloid insufficiency. The same may be said with reference to the granulo-cytopenia which is sometimes associated with thrombo-cytopenia. If all three functions are depressed we are dealing with aplastic anemia which is almost universally fatal; and it is in connection with this condition that mistakes in diagnosis are most often made and disastrous operations undertaken. A brief case report will illustrate the point:

A fifty-one-year-old man was perfectly well until four weeks before admission to the hospital. Onset had been insidious with pains in extremities, tenderness over sternum, hemorrhages from gums and gastro-intestinal tract, and petechial hemorrhages diffuse over body. Physical examination revealed pallor, purpuric phenomena, no splenomegaly. Temperature high. Red count around 2,500,00, Hb. 50%; *no reticulated cells*; platelet count around 25,000. White count varied from 14,000 to 26,000, with neutrophilic leucocytes varying from 0% to 4%. All the evidence pointed to culpability of the bone marrow, not of the spleen. Notwithstanding this, splenectomy was done. The patient died of hemorrhage.

I am showing you an identical case today except for the petechiae—a man of about thirty years, with profound anemia without reticulocytosis, thrombocytopenia, leucocytosis with marked granulocytopenia. He will die* in a few days or weeks in spite of what may be done. He has all the evidence of myeloid insufficiency. Splenectomy is definitely contraindicated.

*This patient died within two weeks.

Now, finally, there is a small group of cases in which splenectomy offers most brilliant and dramatic results, a group which must be most carefully differentiated from the cases just described.

Aside from bone marrow insufficiency, thrombocytopenia may result from destruction of platelets. It appears to be well established that the platelets normally are removed from the circulation by the reticulo-endothelial cells, particularly of the spleen. As is true with other organs, hyperactivity of the spleen is associated with hypertrophy of the organ. Consequently, if the thrombocytopenia is due to increased destruction of the thrombocytes one is justified in expecting enlargement of the spleen.

A brief case report will illustrate this group of cases: H. B., a five-year-old white boy, was admitted to the hospital March 9, 1933. Four months before he was supposed to have had "flu," during the course of which he had nose bleed. Recovery seemed complete, but in about a week epistaxis again appeared. These attacks occurred at intervals for two months as the child grew progressively weaker. During this period it was noted that the skin showed bruises more readily than is normal. Hemorrhagic spots would appear spontaneously.

Upon admission in addition to moderate anemia there was evidence of *active blood regeneration*, as will be seen from the following composite blood picture:

Hb.	35%-78%
RBC	1,750,000-4,410,000
Reticulocytes	3.8%-5.1%
Thrombocytes	20,000-30,000
Coagulation time	3 min.-7 min.
Bleeding time	20 min.
Clot	non retractile
WBC	4,200-9,400
N.	52%-82%

Purpura was marked. Splenomegaly was not noted; but when I first saw the case on March 29, splenic enlargement was definite. At that time I recommended conservative management with transfusions because of the acuteness and the recent onset, at the same time suggesting that splenectomy later might have to be resorted to.

During the next two months the condition fluctuated, but in general seemed to be progressive, the platelets remaining low, the red count remaining about the same, but always with a *high reticulocyte percentage*, around 5 per cent; and a normal leucocyte and differential count. On

April 21 it was my opinion splenectomy should be done. On May 13 it was decided to give some x-ray therapy over the long bones, which was done, a procedure which I believed to be contraindicated, for the reason that insofar as could be determined the bone marrow was in no way or degree at fault, and there was the additional danger of depressing bone marrow function. X-ray therapy more logically could have been aimed at the spleen, with some hope of success.

On June 14 Drs. Clymer and Collins accepted for operation. On that date the hemoglobin was 63 per cent, RBC 3,020,000, platelets 20,000. Operation was undertaken with fear and trembling on June 15. The result was dramatic beyond anyone's hope or expectation. Almost immediately improvement in the hemorrhagic condition was noted. By June 19 the blood picture was as follows:

Hb.	74%
RBC	4,410,000
Reticulocytes	0.5%
Thrombocytes	470,000
Coagulation time	4 min.
Bleeding time	3 min.
WBC	7,400
N.	74%

I had expected to have this case here today for demonstration but he was prevented from appearing because of measles in the family.

There is another case of splenomegaly which I am privileged to show you and consider whether the spleen should be removed. This condition you will recognize from the three classical findings, namely, splenomegaly, red cyanosis and polycythemia. Note the almost cherry redness of the hands and of the face, the cyanosis of the lips, the nose and the lobes of the ears; the spleen reaches almost to the crest of the ilium and to the mid line. The red blood cell count in round numbers is 8,000,000, the hemoglobin 140 per cent. He has all the associated symptoms of polycythemia rubra vera or Osler-Vaquez disease. Should his spleen be removed? There is evidence of bone marrow hyperactivity and there is hypertrophy of the spleen. I believe the splenomegaly is compensatory. Two functions of the spleen are the destruction of the red blood cells, and the furnishing of a reservoir to accommodate the excess of blood, although the latter statement has been questioned. Both functions in this case apparently are necessarily hyper-active in order to take care of the excess blood formed by the bone marrow. Some evidence of this is found

in the fact that the size of the spleen was appreciably diminished when venesections (500 cc.-400 cc.) were done. So to remove the spleen in such a case would deprive the patient of his sole compensatory apparatus.

SUMMARY

In summary, then, when confronted with the question of the removal of the spleen, three questions arise:

1. Is there evidence of bone marrow activity? If not, operation is certainly not indicated. If the bone marrow is active—
2. Is the spleen probably responsible for the condition present? The most accurate index of splenic pathology is enlargement; the second, evidences of excessive hemolysis.
3. Does the patient's condition warrant operation?

If the answer is "yes" to all three questions, splenectomy is indicated.

Three conditions offer excellent prognosis following splenectomy; all three meet the requirements set out above:

1. Splenic anemia before Banti's syndrome is fully developed.
2. Hemolytic icterus which is causing chronic ill-health.
3. Chronic or recurrent thrombocytopenic purpura, especially if splenomegaly exists, when the life of the patient is repeatedly jeopardized.

Except in cases of trauma splenectomy is probably never an emergency. Several cases present are illustrative of these conclusions.

1. Wilkie, David P. D. Splenectomy, Its Indications and Technic. *American Journal Surg.*, 14: 340 (Oct.), 1931.

THE ENDURING ACHIEVEMENTS OF SIR CHARLES BELL

Henry W. Woltman, Rochester, Minn (*Journal A. M. A.*, Aug. 18, 1934), in discussing the life and work of Charles Bell, states that it was not only Bell's determined wish to carry forward the work of the Munros and the Hunters but that he felt that it was also his duty, and that he not only toiled industriously but with an all-consuming passion. Like the other Scots of London, he achieved fame, and he shared their traits. The author presents the salient points, as he sees them, from Bell's "Idea of a New Anatomy of the Brain." Herein Bell anticipates the later discoveries of cerebral localization. He states clearly what is now referred to as "the doctrine of specific nerve energies." The author discusses further Bell's various achievements in the physiology of the nerve system: Bell's palsy, external respiratory nerve, sign, muscle sense and Bell as teacher and clinician.

IMPORTANT PHYSICAL AND BIOLOGICAL PRINCIPLES IN RADIATION THERAPY

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It sometimes seems that those who follow special fields in medicine occasionally read papers which are calculated to properly impress their fellow practitioners with the intricacies of their specialty. I'll admit that my subject sounds like a rather formidable one. However, I assure you that the basis of logical radiation therapy is built around easily understandable facts and concepts. To these I shall confine myself.

I believe it is axiomatic that the medical profession will wage a better fight against cancer in proportion to the improvement in general knowledge, not only regarding diagnosis, but also in relation to the problems of treatment, both by surgery and radiation therapy. I have been stimulated to write this paper by the erroneous ideas in regard to radiation treatment with which I frequently come in contact; ideas which are sometimes transmitted to patients by the referring doctor and which often cause misunderstandings. Occasionally patients come to me who have been treated elsewhere by methods which violate both physical and biological principles. Usually such treatments have been given by one who perhaps uses radium as a side issue to a rather general practice, but sometimes men of apparent experience seem to have lost sight of fundamental facts.

Unfortunately the wherewithal to buy, and not experience in its use, determines whether or not one can possess radium. Equally unfortunate is the apparent fact that some seem to feel the possession of radium confers upon them the Midas touch, with the result that sometimes its field of use is extended quite beyond its field of usefulness.

You are doubtless all aware that the Gamma rays of radium are much harder (shorter) than the Roentgen rays, even when a voltage of 200 Kv. is used. This means that a much higher percentage will be able to pass through the minute interstices which exist in all kinds of matter. In other words, much less absorption of Gamma rays than of x-rays will occur while passing through a certain distance of any substance such, for example, as body tissue. As one increases voltage the

x-rays generated approach more and more closely to Gamma rays in hardness and accordingly in penetrability. In fact, if sufficiently high voltage can be used in generating x-rays, we would have the equivalent of Gamma rays. This explains the recent experimentation which has been going on in this country with voltages of 700 Kv. and even higher.

In spite of the much greater penetrability of Gamma rays over that of the x-rays ordinarily used in treatment, there is another fundamental physical concept which apparently is frequently lost sight of, but which very much restricts the logical use of radium. As we all know, the intensity of light varies inversely as the square of the distance from its source. The same law, of course, applies to the shorter wave lengths which we are discussing. Unfortunately, Gamma rays are generated so slowly that it is financially impossible to get enough radium together so that one can afford to place it at a distance from the body which is at all comparable to the distance commonly used in case of x-rays. When dealing with superficial lesions we are not interested in distance, but in the case of deep-seated lesions, unless we do use quite a little distance, a small area of skin must receive the dose which necessarily is distributed over a much larger area inside the body. Under such circumstances the cancer either receives an insignificant dose or else the skin suffers a most severe reaction.

Perhaps I can make my point clearer if I illustrate it by considering a specific lesion such as cancer of the tongue. This is frequently treated by some form of local application of radium around the site of the lesion and in addition a cross-fire radiation treatment from the outside. In the average individual the distance from the outside of the jaw to the center of the tongue is at least two inches, frequently more. With the ordinary amount of radium available, except in the large cancer centers, the rate of generation of Gamma rays is so slow that one can hardly afford to use a distance of more than one inch. Certainly two inches would be the absolute limit. If the distance from the skin was one inch, then the distance from

the radium to the center of the tongue would be three inches. Squaring these two figures, we find that the intensity of the rays reaching the center of the tongue is only 1-9th, or 11 per cent of that on the skin. This is making no allowance for absorption, which would be slight. In case a two-inch distance was used, even then the intensity at the center of the tongue could not be more than 25 per cent the intensity on the skin. X-rays are generated so rapidly that we can well afford a skin target distance of 25 to 30 inches. Even though the x-rays generated at 200 Kv. are much more easily absorbed than Gamma rays, it is possible by using such distance to deliver 65-70 per cent as much intensity to the center of the tongue as is attained on the area of skin through which the rays pass.

Undoubtedly it is much more commonplace to have a patient lie under a stream of x-rays than it is to fasten some radium on his face, especially if in the latter case we tickle his vanity a little by telling him how many thousand dollars he is carrying around with him and how we trust him with it. By properly using the magic "radium" we can doubtless also persuade him to put a higher value on our services, but as for the cancer cells, they will still respond only to efficient radiation.

Perhaps some of you will ask whether or not the shorter wave lengths are not more potent in destroying cancer cells than the longer ones. There is still room for experimentation before this can be answered with absolute certainty. However, evidence thus far available does not indicate such is the case. Packard¹ recently tested the effect of a wide range of x-ray beams (generated with a voltage of 12 Kv. up to 550 Kv.) on fly eggs and also on mouse tumor 180. He could detect no appreciable difference with the various wave lengths used.² It seems hardly reasonable to expect that further shortening of the wave length would bring any change in these results.

In my discussion of the biological side of this question my conclusions will be more closely applicable to epithelial than to other types of tumors, and more to internal than external growths.

It has long been known that the body tissues exert various types of reaction in the presence of the cancer process.³ In front of the growing margin of carcinoma cells we commonly see large numbers of lymphocytes and plasma cells. Often cancer stimulates a very marked

production of fibrous tissue. While ineffective, these are doubtless nature's reactions against the disease.⁴ One of the effects of radiation therapy is to enhance some of these processes. In addition, it causes an endarteritis which tends to shut off the blood supply. But by far the most important effect of radiation is the more or less selective lethal action on the cancer cells themselves.

In the early days of x-ray treatment, when dosage was uncertain, safety demanded a fractional type of treatment. That is, treatments given with intervals of days, or weeks. Although many external malignancies were cured by this method, it is quite obvious that the intensity was never sufficient to go very far in cancer therapy. Often the growth became more and more radio-resistant until even a very intensive treatment could have no palliative effect.

With the advent of the Coolidge tube and better x-ray machines, dosage became much more accurate. About the same time a considerable knowledge of the action of radium was also being acquired. This naturally resulted in more intensive treatment accompanied by better results.

Shortly after the war when we were hearing wondrous tales of what the Germans were doing with their high voltage x-ray machines, two Germans^{5, 6}, Seitz and Wintz, began talking about a "sarcoma dose" and a "carcinoma dose". Generally speaking, sarcoma is rather unresponsive to radiation, but their "carcinoma dose" was not so fanciful. In fact, it seems quite certain today that any cancer can be destroyed if it is possible to administer a dose of sufficient intensity to all of the cancer cells. The important question is, can such a dose be administered without causing too great damage to normal tissue. Unfortunately, there is a more or less unpredictable variation in susceptibility of different cancers to radiation therapy. A small percentage of carcinomas will be cured by a dose of radiation decidedly below that which will have any marked effect on normal tissue. The majority, however, do not exhibit such radio-sensitivity. Instead, they show a variability of resistance to radiation up to the point where they are affected little, if any, more than normal tissue.

Since we cannot very accurately predict in advance the radio-sensitivity of a given tumor, we must in every case endeavor to administer the maximum dose that we feel we dare give. In other words, if

we are interested in curing as many cases as possible, we must carry our radiation to as great an intensity as we can without doing serious damage to the surrounding normal structures. If we overstep the bounds, we may cause severe suffering and other untoward results, but on the other hand, with inefficient radiation we can gamble away the last possible chance of a cure.

The "carcinoma dose" of Seitz and Wintz was an outgrowth of a rather inadequate experience built on some of the concepts which I have just expressed. At any rate, sufficient truth was evident that it spelled the end of fractional dosage and turned our attention to massive dosage. For a time many believed that the best method of treatment was to get the required dosage in as fast as possible. However, the severe systemic reactions frequently obtained proved a deterrent factor, so that radiologists began to give their massive doses more slowly.

About this time, due to the work of Regaud⁷ and others, the theory began to evolve that cancer cells, like seminal epithelium, are actively multiplying cells which are more vulnerable to radiation during the period of mitosis. With this concept the logical thing then to do was to keep up a more continuous but prolonged radiation reaction of low intensity in an effort to catch all of the cancer cells during this vulnerable stage. At first this idea was chiefly applied to radium treatment, the radium being heavily filtered and used in small quantities. Later, largely as a result of the work of Coutard⁸, much the same idea has been applied to x-rays.

The massive dose idea has not been thrown in the discard—quite the contrary. The dose is really more massive than it was before and in the end produces a fairly severe reaction. However, when given rather slowly, the differential between the effect on normal and cancer tissue seems to be increased over that evident in the short treatment. In other words, normal tissue recovers more rapidly from the effect of radiation than does cancer tissue with the result that by this method, so-called protracted treatment, there is a better chance of a lethal dose to the growth without overstepping the bounds of safety.

Before ending my discussion of the progress made in radiation therapy and the changing ideas regarding treatment, I am sure you will want to hear something about the very high voltage x-ray ma-

chines which are being used in a few places now. As yet, insufficient experience has been gained so that definite conclusions can be drawn. Some men think they have seen enough to warrant considerable optimism. At Memorial Hospital where they have been using 700 Kv. for about two years, they still wish to reserve judgment. When asked in regard to changes noted as compared to 200 Kv., they said it was quite evident that they could produce the same internal reaction with less effect on the skin than was the case with the lower voltage. This is what one would expect from the greater penetrability of the shorter wave length. It will obviously be some time before it will be known how much, if any, advance in treatment can be made by such high voltages.

When speaking of dosage, however we express it, we are primarily concerned with the decree of the biological reaction. We have long spoken of an erythema dose, and while such a dose varies quite a little in the hands of different men, and in the case of different patients, I am sure we will continue to think in terms of it. A few minutes ago I mentioned the variation in the susceptibility of carcinomas to radiation therapy.⁹ Figuring on the basis of erythema doses a small percentage will respond to an intensity of reaction which is not more than two to four times the amount necessary to produce a faint erythema on the skin in the average individual. The majority of carcinomas, however, require much heavier dosage to destroy them. This dosage may run as high as seven to ten erythema doses—an amount which, under many conditions, cannot safely be given.

At this point let us turn our attention to what some of these limiting factors are. The uterus is especially suitable for radium treatment, and fully as important; it is a non-vital structure. On the other hand, a large number of internal cancers occur in vital structures or where vital structures would come in the path of treatment. Even if radium could be applied directly to the lesion, it would be out of the question to carry the reaction to a very high intensity. Cancer of the stomach is a good example of this. A malignancy here cannot be given a very heavy dose. Furthermore, it will very rarely respond to the amount of radiation which can safely be given.

Another very important point is the size of the area to be treated. If this is small,

we have a much better chance of administering the required dosage to destroy the cancer than if it is large. In the first place, treatment over a large area is likely to produce a profound systemic reaction as evidenced by nausea, vomiting, etc. Such symptoms, generally speaking, decrease in severity in proportion to the decrease in size of the area. Another important point is the endarteritis produced by radiation, a fact which I have already mentioned. If the severe disturbance of blood supply is limited to a small area while in the surrounding tissue it is little, if any, impaired, one need have little fear of untoward results. After a certain amount of dead tissue has sloughed out or been absorbed, nature will re-establish a blood supply from the surrounding healthy blood vessels. Perhaps I should mention an exception to this rule. One should always treat cautiously any area where there is a scar. Here the blood supply is already impaired. If much radiation endarteritis is brought about, an ulcer will be produced which will be very slow to heal.

Before passing on I wish to consider post-operative radiation for cancer of the breast in the light of the points just brought out. Of course, the indication for such treatment is the frequency with which the malignancy has spread beyond the operative bounds. Accordingly, radiation seems hardly justifiable unless a much larger area is taken in than was covered by the operation. With such a field to treat and with a large operative scar present, it is quite out of the question to produce a very severe reaction. Accordingly, if cancer cells are left following the operation, there is little chance of more than retarding their growth except in the exceedingly few cases where the cancer is very radio-sensitive. Simple logical reasoning indicates that post-operative radiation for cancer of the breast should not have very much to offer in the solution of this problem.

While small doses of x-ray often prove very beneficial in certain acute and chronic infectious processes, heavy radiation is decidedly contraindicated in such conditions. This is due to the lowering of tissue resistance which is thus brought about. Accordingly where infection exists with carcinoma, steps must be taken to clear up the former before active radiation is begun. This problem is frequently confronted in well advanced carcinoma of the cervix and sometimes in case of malignancies around the mouth. Unless the

infection can be cleared up, the carcinoma will respond poorly and there is danger that the infection may be spread by the treatment.

Unfortunately there is another factor, especially prevalent in these times, which often makes adequate dosage a precarious thing to administer. One does not proceed far in the field of radiation therapy before he discovers that considerable loose talk about x-ray and radium burns can emanate from certain members of his own profession who are frequently also members of the State Medical Association. As always, the garrulousness of such individuals follows the inverse square law in relation to their knowledge of the subject. Since patients are unaware of this fact, it sometimes appears to be the better part of valor to administer the maximum dosage, when indicated, only to a selected group of patients.

No physician should ever use the term x-ray burn unless he intends to make trouble. If such are his purposes, he should not be allowed to longer remain a member of organized medicine, providing he already is one. When a competent radiologist produces rather severe changes in the skin or elsewhere in an intelligent effort to eradicate a malignant growth, such changes are properly termed reactions and should be spoken of only as such.

I shall now cite some cases from which I hope to illustrate a few of the points brought out:

Mrs. B. H. had a subtotal hysterectomy performed a little over seven years ago. The pathological examination revealed a carcinoma of the body of the uterus. She was advised to have some radiation treatment as soon as she recovered from the operation. However, because of the fear of great expense this advice was not followed. After a few months she began to bleed from the cervical stump; this compelled her to seek relief. She came to me in July, nearly seven years ago. While the cervix didn't look very bad, I visioned some malignancy sprinkled around the pelvis and thought only palliation was in store for her. Fearing some intestines might be very close to the base of the cervix, a moderate dose of radium was applied. (I have learned since that it is not necessary to be so cautious.) However, she was cross-fired very heavily with x-rays from four portals of entry. Since she was a very large woman, this could not have produced a very intensive reaction in the pelvis. To my great pleasure

and surprise this woman got well and has had no recurrence up to the present time, nearly seven years. She must have had a type of cancer which was very radio-sensitive.

Two years ago a white male, with a cancer of the jaw, applied for treatment. He stated that he had elsewhere received x-ray and radium treatments every two to six weeks for several months, but felt that he had gradually gotten worse. He said the radium treatments had been applied both inside and outside of his mouth. When he came to me it seemed evident he was losing ground rapidly.

Apart from the method used and the little or no palliation which had been produced, the simple fact that the treatments had been repeated so often with intervals between shows that at no time could there have been a reaction of much intensity. When a radiation reaction is carried to a sufficient intensity to warrant hope of a cure, it is not advisable to repeat it for from four to six months. In this case the frequent treatments had made the cancer so radio-resistant that even a massive dose could not have accomplished anything. Needless to say, there was no temptation luring me to take over this case.

Another recent case, a moderately advanced carcinoma of the cervix illustrates another point. This patient was referred to me two months after she had an initial dose of radium. While this dose was not very large, it had so contracted the vaginal vault by the time I saw her that it was impossible to expose the cervix. She had probably become somewhat radio-resistant, but in addition, the contractile changes had made it impossible to produce any very marked radiation reaction; such reaction had to be accomplished almost wholly by x-rays. As one might expect, not even a very satisfactory palliation was obtained.

At the present time the American Medical Association, through its council on Medical Education and Hospitals, is attempting to set certain standards for the practice of radiology. This is a very laudable aim and will doubtless help to put this specialty on a higher plane. Such efforts at regulation, however, can only partly solve the problem of more efficient radiation therapy. The great advance must come from a better general knowledge of this subject on the part of the average physician.

230 Osler Building.

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DISCUSSION—*Dr. M. B. Lhevine*, Tulsa, Oklahoma.

Mr. Chairman: Dr. Myers presented a very interesting and stimulating paper, and presented a difficult subject in a masterly manner. I have very little to add to this paper. I would like only to emphasize a few points.

First, as to the practicability of the higher voltages in the treatment of malignancies. This is yet a mooted question as to the value in the use of super voltage x-ray apparatus and radium packs. The biologic effect of large masses of radium and superpowered x-ray apparatus is not known as there are no definite biological results from the use of the latter on human beings as yet reported.

Dr. Carter Wood of New York claims that proper radiation with x-ray produced of 200 Kv. maximum voltage is equal to that given by the usual radium pack, is less hazardous biologically and even more beneficial than the proposed x-ray produced by supervoltage.

Dr. Myers calls attention to the radio sensitivity of different types of tumor and the intensity of the dose. The law of Bergonie and Tribondeu which was found to have a uniform application stated that tumors composed of rapidly multiplying cells, especially those of embryonal type and particularly those of the lymphoid group, are highly susceptible to radiation, because of the rapid multiplication of cells, loose structure and active metabolism. The adenocarcinomas and adenomas of glandular origin long tend to produce orderly glandular structures that resist radiation. Finally sarcomas of osteogenic

origin, all of which yield much intercellular material which resists radiation. The general condition of the patient has an important influence on the behavior of the tumor under treatment. There is a definite relation, not always uniform between grades of malignancy and radio sensitivity. All these matters require careful evaluation before radiation therapy can be intelligently conducted and its results predicted. A most important and remarkable phenomenon is the acquired resistance to radiation following successive inadequate dosage.

To the radio therapist a knowledge of the grades of malignancy and radiosensitivity is of the first importance. Knowing what radiation can or cannot accomplish, he will have a sound basis for planning treatment, both as to intensity of dosage and scope of the field to be irradiated. He will not attempt to destroy squamous carcinoma or osteogenic sarcoma with half erythema dose of external radiation.

Before I close my discussion I want to say a few words about treatment of cancer of the breast.

Preoperative irradiation has been justified on four grounds:

1. The classical experiment of Murphy and others in which cancer tissue grafted under the skin in a region previously submitted to an erythema dose of irradiation failed in a high percentage of cases, whereas, a fragment taken from the same tumor and given "cancer dose" of irradiation, grew as well as no irradiation graft when imbedded under the skin of another mouse.

2. Preoperative irradiation permits the taking of a biopsy without the risk of speeding up the malignant process or of implanting tumor cells in the skin wound.

3. Practical experience shows improvements in result.

4. By diminishing peri-tumoral infiltration may make an inoperable condition operable.

Postoperative irradiation is claimed to destroy cancer cells left behind at operation or not yet visible as metastasis. It is true that the rays may so lower the resistance of healthy tissues as to permit their being rapidly overrun by the cancer process. To guard against this, the patient's blood must be frequently checked. The most serious charge against post-operative irradiation of breast cancer is that of damaging the lungs. At present, safety

is found in fractional dosage and as far as possible tangential irradiation.

There is no question as to its beneficial effects in local and distant recurrences, and in inoperable cases where it can prolong life and make the patient more comfortable.

CLOSING DISCUSSION: *Dr. Ralph E. Myers.*

In closing, I wish to emphasize the fallacy of giving x-ray or radium treatments with appreciable intervals between. In 1924, in a paper read at Chicago, Dr. Regaud of the Curie Hospital spoke as follows:

"The observations on human cancers, treated by radiation, have revealed another most important conclusion: The progressive decrease in radiosusceptibility of the cancer cells treated by repeated non-sterilizing irradiations. These ineffective irradiations will finally bring a necrosis of the treated region. This well-established fact forces us to adopt the rule of the single protracted treatment in human cancer."

This principle of treatment is accepted today by the leading radiologists as it was at that time. The changes which have been made are in the direction of greater intensity and of longer duration.

Only recently a method of treating cervical carcinoma was brought to my attention in which series of treatments were given at six weeks intervals with the radium treatment being separated from that of the roentgen rays. Obviously this violates the principles laid down above. The two types of treatments should be given together because by so doing the desired reaction is extended over a wider area. If the reaction is sufficiently intense to destroy the cancer, there is no need of further treatment. If it is not, the addition of more treatment after a period of six weeks will only make the cancer cells more radio-resistant and at the same time increase the damage to normal tissue.

Further progress in the cure of cancer can still be made with radium and the present 200 Kv. x-ray machines. This progress must come, however, from those who thoroughly understand the principles which underlie this type of treatment and who, therefore, can intelligently and with a reasonable degree of safety produce more intense reactions than are common today. Under-treatment rather than over-treatment is the present more prevalent error.

President's Page

LEROY LONG, M.D.
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OKLAHOMA CITY

DR. ROBERT C. COFFEY

This article is dedicated to the memory of an eminent surgeon through whose tragic death in an aeroplane accident last Fall the medical profession and the people of the world have been deprived of a peculiarly unique and most remarkable professional service. I refer to Dr. Robert C. Coffey, of Portland, Oregon.

Dr. Coffey and I were born in the same year and in the same state, but that is not why I speak of him here. We were students together in the same school, but that alone would not make it appropriate for me to speak. We were friends for many years, but even that, notwithstanding the store that I place upon it, is not the principal reason for my efforts to pay a tribute to his memory. No, it is not because we were born in the same state, nor because we studied medicine in the same school, nor yet because of the tender memories of a friendship that has done much to bear me up in my professional struggles. I have even a higher motive, for I speak of him because no man in my generation has done more, single-handed and alone, to solve some of the most difficult and disheartening problems in surgery.

Dr. Coffey received his preliminary education in a small school in North Carolina, and after that he taught school for a short time. While he was still a young man he entered Kentucky School of Medicine. This was a spring and summer school. When I entered Louisville Medical College Coffey was in the class taking what was then known as an unofficial course. It did not take me long to discover that three or four members of that class stood out far in advance of the other members of the class, and Robert C. Coffey stood at the head of those fortunate three or four.

Dr. Coffey was particularly interested in the study of anatomy. We had in that school at that time one of the greatest teachers of anatomy on the American con-

tinental, Dr. Clinton W. Kelly. Under the system then in vogue, the class in anatomy was divided into groups, each group being under a demonstrator selected from the advanced students. It was my good fortune to be placed in the group over which Coffey presided, and I shall never cease to be thankful for this remarkably important circumstance, because with the tremendous force of Clinton W. Kelly behind the department of anatomy and this virile young man in immediate charge of the group in which I worked, I was inspired with an ambition to know something about this tremendously important fundamental subject in medicine.

Parenthetically, it is interesting to reflect upon how much the future course of Dr. Coffey and his remarkable accomplishments in surgery depended upon the tremendous importance attached to anatomy in Louisville. Dr. Kelly had a powerful and dominating personality. He was so imbued with the importance of anatomy that it was to him a religious duty to instil into the students the principles of anatomy. When one scans the innovations in surgery made by Dr. Coffey, one is impressed with the fact that most of them are distinctly based upon anatomical knowledge.

After the completion of his professional training, Dr. Coffey located in a small town in Idaho, and worked there for several years. Even in those early days the profession in that section of the United States knew about his aggressive characteristics.

About the beginning of this century Coffey located in Portland, Oregon. Portland was then a very ordinary town. There was nothing about it that would stimulate original investigation more than hundreds of towns of the class to which Portland belonged. It would have been easy to have drifted along with the current, but Robert C. Coffey did not do that. He began a

series of investigations in a distinctly scientific way. On his own initiative, he laid down the foundation for the important work that he was to do during the next three decades. He built and equipped an animal hospital for research, and in that hospital he worked out many problems.

And Coffey did not choose easy problems. On the contrary, it would seem that he deliberately selected the most disheartening problems. He took up the question of cancer of the rectum and he systematized a technic that is followed, in whole or in part, by many surgeons all over the world. And then he took up the baffling condition of extrophy of the bladder which had never been relieved in a satisfactory way. By long and arduous investigation he finally perfected the technic through which the ureters may be transplanted into the large bowel in such a way that there is not regurgitation and disastrous back pressure upon the fatal infection of the kidneys. The technic that he perfected is now used successfully by surgeons everywhere, and it is the only practical procedure in connection with the relief of a condition that was formerly entirely irremediable, and usually fatal before the patient had advanced very far in his life career. If Coffey had not done anything else this triumph alone would place him among the immortals in medicine.

Coffey studied and wrote about many subjects. He presented definite plans for the treatment of intra-peritoneal infections, most of them having a distinct and important anatomical basis. His contributions to the study of cancer attracted favorable attention. His original technic in connection with the performance of the various intra-abdominal operations was clear and distinct. His contributions were so intelligent, succinct and forceful that for many years he has been quoted in the text books and current literature of medicine throughout the civilized world.

Coffey was a clean and wholesome man. He was particularly free from the petty and disastrous vices that men sometimes say are found in connection with genius. He, at least, was a genius whose work was initiated by clear thinking, right living, and stable procedure. I do not mean that he was a prude, because he had a sense of humor that helped to lighten the load that he carried all the time. But it was clean humor. I repeat that he was a wholesome man.

In my judgment, medicine of the world has not furnished a more striking example of what an intelligent and determined member of the medical profession may do, if he has a will to do, regardless of his location. The life work of Coffey in medicine demonstrates that any intelligent member of the profession may have, within himself, the principal requisites for success and usefulness.

Coffey is gone now, and I must say goodbye to my friend. As I think of his accomplishments, carried out under unfavorable circumstances by his indefatigable determination to succeed, I humbly bow at the shrine dedicated to his memory.

Oh, Coffey, thou who didst by thine own initiative hew out a place for thy work. Oh, Coffey, thou who didst do so much for the relief of those who had despaired of relief. Oh, Coffey, thou who didst stand "like a solitary statue in the City of God, while secret passages, running deep beneath external nature, gave thy soul intercourse with higher intelligences which strengthened and soothed thee, but of the existence of which those about thee didst not even dream."

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PREScribing OF DEXTROSE PHLEBOCLYSIS

Bernard Fantus, Chicago (Journal A. M. A., June 30, 1934), points out that in all very sick patients an adequate income of water, sodium chloride and dextrose should be taken care of as a routine procedure before rather than after a high degree of deficiency has occurred. This, in cases in which adequate oral administration is impossible, can generally best be accomplished by dextrose phleboclisis, the composition of which should be determined by the individual indications present. For combating hypohydration and for the relief of thirst, a 5 per cent solution of dextrose in distilled water seems preferable. Whenever salt starvation is threatened or present, dextrose-saline phleboclisis should be practiced. Whenever carbohydrate cannot be ingested or digested to a sufficient degree, 10 per cent dextrose phleboclisis should be resorted to. In poisoning with diffusible poisons, the diuretic and possible liver protective action of dextrose phleboclisis adds itself to the foregoing therapeutic values. Concentrated (25 per cent) dextrose solution may be of value in certain internal hemorrhages, in inflammatory and exudative pulmonary edema, to lessen intracranial pressure (unless there is cerebral hemorrhage) and possibly in myocardial weakness. During phleboclisis, other remedies may be conveniently infused; e. g., antisera, epinephrine, insulin, iodide, sedatives and stimulants.

THE JOURNAL

OF THE

Oklahoma State Medical Association

Issued Monthly at McAlester, Oklahoma, under
direction of the Council

VOL. XXVII SEPTEMBER, 1934.

No. 9

DR. L. S. WILLOUR.....Editor-in-Chief
McAlester, Oklahoma.

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Medical Arts Building, Tulsa, Okla.

Entered at the Post Office at Muskogee, Oklahoma,
as second-class mail matter July 28, 1912.

This is the official Journal of the Oklahoma State Medical Association. All communications should be addressed to The Journal of the Oklahoma State Medical Association, 203 Ainsworth Building, McAlester, Oklahoma. \$4.00 per year; 40c per copy.

The editorial department is not responsible for the opinions expressed in the original articles of contributors.

Reprints of original articles will be supplied at actual cost provided requests for them is attached to manuscripts or made in sufficient time before publication.

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Failure to receive The Journal should call for immediate notification of the editor, 203 Ainsworth Building, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

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EDITORIAL

MEDICAL CARE OF THE INDIGENT SICK

Last November, at a special meeting of the Council, definite plans were outlined and a fee schedule submitted to the Federal Administrator, who at that time was Governor Murray, relative to the medical care of the indigent sick. As you know from previous editorial comments in these columns nothing was done by the Federal Administrator and it has never been arranged for the doctors of Oklahoma to receive any pay for this sort of service.

On August 13th there was a called meeting of the Committee on Medical Economics, held in Oklahoma City, and this

matter was discussed. The committee visited a representative of Mr. Carl Giles, Federal Administrator, and he told us in no uncertain terms that it would be impossible for the Federal Administration to use any money for this purpose and until some money was appropriated by the state to assist in this Federal relief that no new avenues of expenditure would be opened.

At this time heads of families who are employed by the FERA are supposed to be self-supporting and are recognized as employed individuals; they will, consequently, be expected to pay for the maintenance of themselves and families, including medical care. The unemployable unemployed are at this time wards of their respective counties and the taxpayers are responsible for their support and medical care. This is the ruling of the Federal Administration.

The Committee on Medical Economics has decided to take this matter up with Mr. Hopkins, the National Administrator, advising him of the situation in this state as to the number of indigent sick to be cared for and the economic inability of the medical profession to continue to carry this load.

Whether or not any relief will be forthcoming from this source remains to be seen, but appears to be doubtful. In the face of the foregoing it would seem evident that the respective counties must square themselves to take care of the burden that has been borne through this emergency by the medical profession of the state.

CONTRACT PRACTICE

There has been a great deal of discussion in the various county societies of the state relative to contract practice. Various members of the State Medical Association who have been doing work under contract have been criticized and some have been tried and various degrees of discipline instituted. The situation has been greatly clarified by the recent action of the House of Delegates of the American Medical Association in which contract practice has been definitely defined and is as follows:

"By the term 'contract practice,' as applied to medicine, is meant the carrying out of an agreement between a physician or a group of physicians, as principals or agents, and a corporation, organization or individual, to

furnish partial or full medical services to a group or class of individuals for a definite sum or a fixed rate per capita.

"Contract practice per se is not unethical. However, certain features or conditions, if present, make a contract unethical, among which are: 1. When there is solicitation of patients, directly or indirectly. 2. When there is underbidding to secure the contract. 3. When the compensation is inadequate to assure good medical service. 4. When there is interference with reasonable competition in a community. 5. When free choice of a physician is prevented. 6. When the conditions of employment make it impossible to render adequate service to the patients. 7. When the contract, because of any of its provisions or practical results, is contrary to sound public policy.

"Each contract should be considered on its own merits and in the light of surrounding conditions. Judgment should not be obscured by immediate, temporary or local results. The decision as to its ethical or unethical nature must be based on the ultimate effect for good or ill on the people as a whole."

With this before you it would appear that these cases now may be handled in a more definite and certain manner.

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STATEMENT CONCERNING MATTERS INVOLVED IN A RESOLUTION SUBMITTED BY DR. HORACE REED TO THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION AT ITS CLEVELAND SESSION, 1934:

At the meeting of the House of Delegates, Tulsa, May, 1934, a resolution was introduced requesting the American Medical Association to give consideration to the matter of this organization writing protective insurance for the medical profession. This matter was prepared in the form of a resolution by the delegates and was submitted to the House of Delegates of the American Medical Association by Dr. Horace Reed. Below you will find a report on this subject by the Director of the Bureau of Legal Medicine and Legislation which we have published in full for your information:

"The American Medical Association cannot under its present articles of incorporation engage in the insurance business.

"The American Medical Association is incorporated under the laws of the State of Illinois, as a corporation not for profit. The object of the Association, as stated in its articles of incorporation, is to promote the science and art of medicine. The articles of incorporation do not authorize the Association to carry on an insurance business.

"The Board of Trustees of the American Medical Association could not properly use the funds of the Association for the purpose of promoting the organization and operation of a new insurance company or association, even for the purpose of indemnifying members of the Association against losses through malpractice, without a mandate of the membership so to do.

"Under the guise of an investment, the Board of Trustees might invest funds of the Association in the stock of a new and untried casualty insurance corporation or lend funds of the Association on the unsecured notes of a mutual insurance association, in the hope that some day the excess of premiums over losses through malpractice claims and expenses of administration might make the insurance corporation or association self-supporting. Such a course, however, would represent speculation, rather than investment, and would certainly not be consistent with good business judgment. No matter what the authority of the Board of Trustees may be with respect to such an investment or speculation, it would certainly not be expedient for them to embark on such an adventure without the expressed approval of the members of the Association.

"The American Medical Association is not organized to carry on the insurance business. To reorganize so as to qualify for that purpose would be difficult and expensive, and in the absence of reasonable certainty of corresponding returns would hardly be justifiable.

"Passing from the legal and financial aspect of this problem to the matter of expediency, it may be pointed out that the successful conduct of an insurance business requires an extensive organization, with highly specialized technical knowledge and skill, and that the Association does not now possess such an organization and could not easily gather one together without considerable cost. Moreover, unless the Association should be willing to carry on the insurance business by the mail order system, expensive compliance with the insurance laws of the several states would be necessary before the Association could as an insurance corporation function in them.

"The selection and rejection of insurance risks and the compromise and defense of claims based on alleged malpractice would involve the making of distinc-

tions among members of the Association that would tend to breed internal dissension.

"The harmonious operation of the American Medical Association and of its constituent state and county organizations would be jeopardized, if the Association entered on the insurance business, by the fact that the business of insurance requires the selection and retention of good risks and the avoidance and discharge of bad ones, and that the process of selection and rejection might easily introduce strife into the organization. Qualifications for membership in the Association are not necessarily the same as the qualifications of a good insurance risk, such as can be safely defended and indemnified against loss through claims based on alleged malpractice. If the Association should engage in the insurance business, it would sooner or later have to pass on the insurability of the several members of the Association and determine in many cases whether members should or should not be defended against claims made against them. The discrimination between insurable and defendable members and members neither insurable nor defendable would tend to lead to misunderstanding and hard feeling. A member denied the benefit of the Association's insurance service would hardly be satisfied with the denial, and he and his following would be discontented and constitute a focus of dissatisfaction in the Association. This would not promote harmony nor efficiency in the science and art of medicine or in the conduct of the business of insurance.

"If the American Medical Association should engage in the insurance business, it would be exposed to a vulnerable point of attack by cultists, anti-vivisectionists, anti-vaccinationists, quacks, and offended vendors of fraudulent nostrums.

"If the Association should engage in the insurance business, directly or indirectly, cultists, anti-vivisectionists, anti-vaccinationists, quacks, and offended vendors of fraudulent nostrums might readily promote malpractice claims against members of the Association, for the purpose of weakening its financial position and destroying its good name. Every suit defended by the Association and lost would be represented by the enemies of the Association as efforts to justify malpractice and to deprive patients injured through the ignorance, negligence, unskillfulness, and bad judgment of members of the

Association of their just dues. Cultists, anti-vivisectionists, anti-vaccinationists, quacks, and offended vendors of fraudulent nostrums, and the friends of all of them, while serving on juries, might well utilize their opportunities for augmenting awards of damages, knowing that any award made would come out of the funds of the American Medical Association.

"In the defense of its members, the American Medical Association would be handicapped by the fact that it would have to draw its expert witnesses from its own membership, since the weight of their testimony might be weakened by the fact of their association with the defendant in the same organization. The fact that the Association would indemnify the defendant against any loss through any award of damages against him would tend to create liberality on the part of the jury in awarding damages.

"If the American Medical Association were engaged in the defense of its individual members against losses through claims for malpractices it would have to call on its own members for expert testimony on behalf of the defendant. Under such circumstances the plaintiff would exert every effort, and frequently with success, to get before the jury that the witness testifying for the defendant was a fellow member with the defendant in the American Medical Association, that any judgment that might be awarded would be paid by that Association, and that, therefore, the witness had an interest in weighing his evidence in order to protect his own organization against financial loss. That would certainly tend to weaken the evidence of the witnesses for the defense.

"It is a commonly recognized fact that jurors are more liberal in awarding damages that are to be paid by supposedly rich corporations than they are in awarding damages when they know they are to be paid by some poor defendant. A jury that might award a moderate amount against some poor physician who the jury believed would himself have to pay any judgment awarded against him, would be ready to award a very considerable larger amount if it were known that any judgment awarded against the poor defendant would not embarrass him, since it would be paid by the American Medical Association."

SIXTH ANNUAL MEDICO-MILITARY SYMPOSIUM OF THE MAYO CLINIC

The 1934 Medico-Military Symposium for Medical Department Reserve Officers of the Army and Navy will be held at the Mayo Clinic, from October 7th to 20th, both dates inclusive.

This is the Sixth Annual Inactive Duty Training Course to be held at the Mayo Clinic and will follow the plan which has been proven so satisfactory in past years; that is to say, the morning hours will be devoted to attending clinics on subjects selected by the student officers, and the afternoon and evening hours given over to work in Medico-Military subjects. The Medico-Military program will be under the personal supervision of Colonel Kent Nelson, M.C., U.S. Army, Corps Area Surgeon, Seventh Corps Area, and Captain J. B. Mears, M.C., U.S. Navy, District Medical Officer, Ninth Naval District.

The staff and faculty of the Mayo Clinic have placed their unexcelled facilities at the service of their government in the interest of preparedness and have extended an invitation to all the service to participate. The two weeks' excellent clinical post-graduate work must make a definite appeal to all who are interested in their profession and does not incur as great a loss of time for the private practitioner that normally pertains to post-graduate work along professional lines.

The general motif of the Medico-Military part of the symposium will be "Public Health and Its Relation to National Defense." The problems of administration in military service presents features not dealt with in private practice. In the great field of sanitation as applied to military service, the medical officer has a distinct specialty. This course offers valuable and interesting training for the medical officer in all the components of our national defense. A splendid program of a thoroughly practical nature has been carefully compiled and the speakers selected for their ability to present authoritatively the subject assigned them.

Application for this course of Inactive Duty Training should be made either to the Corps Area Surgeon, Seventh Corps Area, Omaha, Nebraska, or to the District Medical Officer, Ninth Naval District, Great Lakes, Illinois. Applications should state the character of the work the candi-

date desires to follow in the morning hours. All student officers are expected to attend and participate in the afternoon and evening sessions. Each applicant should fully understand that the invitation to accept this course of study without charge is extended by the Mayo Clinic; that the project is without expense to the Government; and that one hundred hours' credit will be given those who take and complete the course. While it is desirable to attend the entire course, those whose time will not permit this may join or leave at any time and will receive credit for the hours spent in training. Uniforms are optional.

Editorial Notes—Personal and General

DR. and MRS. R. Q. ATCHLEY, Tulsa, spent the latter part of August at Three Lakes, Wisconsin.

DR. J. E. STANDIFER, Elk City, has returned from New Mexico and Colorado where he has been vacationing.

DR. EARL McBRIDE, Oklahoma City, spent the latter part of August at Cottonwood Lake, Colorado, with his family.

DR. E. W. REYNOLDS, Bristow, has been named as county physician, Creek County, succeeding Dr. O. C. Coppedge.

DR. LeROY GOODMAN, formerly of Yukon, has opened offices in Shawnee where he will be on the surgical staff of the Shawnee Hospital.

DR. G. W. DIGGS, Wetumka, was elected county commander of the American Legion. Dr. Diggs was formerly post commander of the Clarence Kitchen Post.

DR. and MRS. G. A. KILPATRICK and family, Henryetta, spent two weeks in August in Rochester, where Dr. Kilpatrick took special work at the Mayo Clinic.

DRS. E. S. FERGUSON, E. GORDON FERGUSON and JOHN FERGUSON, Oklahoma City, are spending the remainder of the summer in Winnipeg, Canada.

DR. AND MRS. ONIS HAZEL, DR. AND MRS. JOHN H. LAMB, Jr., and DR. E. S. LAIN, Oklahoma City, have returned from a two weeks' fishing trip on the Minnesota lakes.

DR. and MRS. W. W. KERLEY, Anadarko, have returned from Chicago, where they attended the World's Fair, and Montreal and Quebec, Canada. On their return they visited New York, Boston and Washington, D. C.

THE DALLAS SOUTHERN CLINICAL SOCIETY will hold its seventh annual clinical conference at the

Baker Hotel, Dallas, Texas, March 18 to 25, inclusive. Featured for the occasion are fourteen distinguished guest speakers, fifty-four graduate lecture hours, daily afternoon clinics and clinico-physiological conferences, operative clinics, round table luncheons, night symposia, and clinical banquet. Five full days of unexcelled post-graduate teaching by outstanding lecturers. Detailed information may be had by writing Dallas Southern Clinical Society, 1414 Medical Arts Building, Dallas.

MRS. MARIE HAVEN FERGUSON

The profession of the state was greatly shocked to hear of the untimely death of Mrs. E. S. Ferguson, wife of one of our recent past presidents. The doctors of Oklahoma and their wives will remember this gracious lady who has been hostess on many occasions during our meetings in Oklahoma City.

Mrs. Ferguson became ill at her home, 700 Northwest Fifteenth Street, and after about ten days was taken to St. Anthony's Hospital where she expired August 5th. She was very active in social life in Oklahoma City and particularly in the activities of the First Presbyterian church. She was a very fine vocalist and gave freely of her talent for the entertainment of her many friends.

Mrs. Ferguson is survived by our colleagues, Drs. E. S. Ferguson, E. Gordon Ferguson and John Ferguson, who is a junior at Yale.

At this time we wish to express to these survivors the sincere sympathy of the profession of Oklahoma.

INTERNATIONAL ASSEMBLY INTER-STATE POST GRADUATE MEDICAL ASSOCIATION OF NORTH AMERICA

The first International Assembly of the Inter-State Post Graduate Medical Association of North America to be held east of the Alleghenies is to take place in the public auditorium of Philadelphia, Pennsylvania, November 5th, 6th, 7th, 8th and 9th, 1934, with pre-assembly clinics on November 3rd and post-assembly clinics on November 10th in the Philadelphia hospitals.

The public auditorium is located in the university area and across the street from the Philadelphia General Hospital, thus assuring the assembly close access to an abundance of clinical material.

The aim of the program committee with Dr. George W. Crile as chairman is to provide for the medical profession of North America an intensive post graduate course covering the various branches of medical science. The program has been carefully arranged to meet the demands of the general practitioner, as well as the specialist. Extreme care has been given in the selection of the contributors and the subjects of their contributions.

The Philadelphia County Medical Society will be host to the assembly and has arranged an excellent list of committees that will function throughout the assembly. A most hearty invitation is extended to all members of the profession who are in good standing in their state or provincial societies to be present and enjoy the hospitality of Philadelphia, "The City of Brotherly Love". A list of distinguished teachers and

clinicians who are taking part on the program will be found on page 21 of the advertising section of this Journal.

All members of Oklahoma State Medical Association are cordially invited to attend. Registration fee of \$5.00 admits all members of the profession in good standing.

Special reduced railroad rates will be in effect on all lines.

SUPRAPUBIC PROSTATECTOMY WITH IMMEDIATE CLOSURE OF THE BLADDER: IMPROVED METHOD OF POSTOPERATIVE DRAINAGE

H. H. Haynes, Clarksburg, W. Va. (Journal A. M. A., July 21, 1934), presented eight cases of primary closure, with postoperative drainage by a return flow catheter. The usual suprapubic incision is made. When the bladder is opened, suction is used to remove the contents of the distended bladder and thereby avoid unnecessary soiling of the wound. After enucleation of the prostate, complete hemostasis is obtained and the prostatic fossa is obliterated with plain catgut. An ordinary catheter used for irrigating and distending the bladder is left in the urethra during the operation. Before the fossa is obliterated, the end of the small intake tube of the special drainage catheter is sutured with strong silk or linen to the tip of the catheter introduced before operation. The urethral catheter is now withdrawn and the special catheter follows through the urethra. When the distal end of the drainage catheter is withdrawn, the intake tube is removed from the main catheter through the small oval opening. The button flap is adjusted over the intake tube and fastened in position to prevent leakage of the return flow. The intake tube is then attached to the irrigating apparatus and the return flow tube connected to carry the return flow into a suitable receptacle. The irrigation is now turned on to demonstrate that the drainage catheter is functioning properly. After obliteration of the prostatic fossa and complete hemostasis, the Pezzar tip of the drainage catheter is drawn snugly into position. The usual suture to obliterate the space of Retzius is now placed but not tied. After this the bladder incision is closed completely with two rows of chromic catgut. The first row of sutures should include all the muscularis but not the mucosa and is a continuous lock suture. This row is completely buried by a continuous Cushing right angle suture. The suture, previously placed to obliterate the space of Retzius, is then tied. The abdominal wound is closed in the usual manner except that several loops of catgut extending down to the bladder are placed in the lower angle of the incision for drainage of the prevesical space; these are removed on the third day. Continuous irrigation, by the drop method, is started before the bladder is completely closed and continued twenty-four hours. On the second day irrigation is done every four hours, and afterward every morning and evening. The drainage catheters were removed from the seventh to the tenth days. Vasectomy was not performed in any of these cases and epididymitis or other complications did not occur. There was no bladder leakage in any of these cases and all suprapubic wounds were completely healed when the patients were discharged from the hospital. The advantages of this method of drainage are continuous or intermittent return flow irrigation with any desired solution, better drainage, shorter hospitalization, no suture anchorage in the bladder, assistance from Pezzar tip in obliterating prostatic fossa and better anatomic and functional results.

ABSTRACTS • REVIEWS • COMMENTS AND CORRESPONDENCE

EYE, EAR, NOSE and THROAT

Edited by Marvin D. Henley, M.D.
911 Medical Arts Bldg., Tulsa

Muscle Training in Functional Convergence Insufficiencies. Leighton F. Appleman, M.D., Philadelphia. Archives of Ophthalmology, June, 1934.

A stimulating discussion is given of this subject with helpful suggestions for keeping the interest of the patient over a period of trying weeks or months, both for the oculist and the patient. The progress of the patient is slow many times and it is a difficult matter to keep him from becoming discouraged and forsaking his exercises. The author's explanation to the patient of the necessity of the routine inaugurated in muscle training is of interest to all oculists. It gives the patient a different perspective as to why he must daily perform the outlined manipulations.

The oculist himself must be firmly convinced that the outline of treatment to the patient will produce the desired result before he will be able to successfully pass this conviction on to the patient. So many different methods are used to attain similar ends that there is more or less confusion in regard to this subject. The fact is deplored that the knowledge obtained from post-graduate work is not used more in our routine clinical work. Asthenopic symptoms are referable to the refractive error, muscle imbalance and deficiency in convergence power. The essayist concerns himself with the last mentioned in this publication.

The exercises when properly carried out for the proper length of time rarely have to be repeated even over a period of many years. If the prism is increased too rapidly or the treatments stopped too soon, repetition will be obligatory if the patient is to become free of symptoms. When the patient arrives at the point in his exercises where he can see for himself that there is improvement it is not so great a task for the oculist.

Two cases are reported. One, a nurse, age 40, a hyperope, who had worn glasses for fifteen years. At the first testing there was present an imbalanced convergence power. Muscle training was started but after two or three weeks she gave up the exercises saying that they provoked rather than helped her symptoms. About three or four years later she returned because of increased symptoms. Muscle training was again started but this time with a much weaker prism and after four and a half months' training she has remained free of symptoms for the past ten years. Probably if she had been started with the weaker prism the first time she would have been able to continue the exercises and would have been saved years of discomfort. The second case is that of a teacher, age 33, a myope, who after six months of exercises was relieved of all symptoms for eleven years. A second course of exercises of four months duration gave her the required converging power to carry on her prolonged close work without discomfort.

The tedium of the exercises is amply repaid in the comfort to the patient and satisfaction of the oculist.

Latent Osteomyelitis of the Sphenoid Bone Reactivated by Trauma With Death From Meningitis. Dr. Aaron Kaufman and Dr. Samuel J. Hartmere, Boston. The Laryngoscope, June, 1934.

"Sphenoidal suppuration is not rare; it is only its diagnosis which is uncommon," is the observation of Lermoyez. Postnasal catarrh, headaches and ocular disturbances whose etiology remains unknown over a period of time should make one think of an osteomyelitis unless this condition has been definitely ruled out. When the diagnosis is made one should not hesitate to take the necessary steps for the eradication of the infection, varying from nasal cleansing treatments to surgical removal of the focus of infection. The anatomy of the sphenoid bone is given in much detail and reasons in this connection pointed out as to why a patient with this condition is especially prone to contract meningitis by extension of the infective process. The roof of the bone and along the course of the vessels through the bone are particularly vulnerable points. A careful roentgenogram study of each patient is stressed. There is a case report of a female, white, age 18, who gave a history of a chronic maxillary sinusitis and ethmoiditis which had been treated for some time. She came under observation in July, 1926. Her chief complaint was difficulty in breathing and a thick nasal discharge. Tissues of the nose were swollen and boggy at this time but no diagnosis was made. She again appeared in October, 1930, complaining of headaches and nasal discharge. These frontal headaches were of four years duration and of the greatest intensity in the mornings. They radiated toward the occiput. The tonsils and adenoids had been previously removed. Inspection showed tonsillar tabs present in both fossa and a green postnasal discharge. In the middle and inferior meati, left, there was a partial obstruction with a discharge similar to that in the postnasal region. When the left side was cleansed with suction polyps and polypoid degeneration were found. There was tenderness in the left supraorbital region. The right side was negative. Transillumination was positive over the entire left side of the face. Roentgenograms showed a left frontal sinus and ethmoids and both antra with thickened mucous membranes.

The diagnosis at this time was a left pansinusitis. A left radical maxillary sinus and partial transantral ethmoidectomy was done November 21, 1930. Eight days postoperative there occurred a profuse hemorrhage from the left nares which was checked with difficulty by means of packs and sponges. The following day there was a rise of temperature with the beginning signs of meningitis. The fundus examination revealed no abnormality. The white count was 23,000. On December 5, a lumbar puncture confirmed the suspicion of meningitis. The patient appeared quite comfortable immediately following the lumbar puncture but one hour later quietly died.

Post mortem examination showed the pons and the inferior surface of the cerebellum covered with a thick exudate with a small pressure cone present,

a condition which according to the consulting neurologist is not uncommon in patients who have not died suddenly. The ethmoids on both sides and the sphenoid were full of thick pus. The dorsum sellae showed chronic osteomyelitis which was continuous into the sphenoidal sinus.

A more careful observation and roentgenogram study would help to avoid such grave results.

Notes on the Diagnosis of Otitic Meningitis. Samuel J. Kopetzky, M.D., New York. *Annals of Otolaryngology, Rhinology and Laryngology*, June, 1934.

Because of the many hazards surrounding otitic meningitis it is apparent that an early diagnosis in meningeal infection, of this origin, is of the utmost importance. It is generally agreed that the cerebrospinal fluid is a dialysate. The author gives Weed's theory of the filtration of the fluid. Normally the cerebrospinal fluid is concerned with the metabolism of the brain cells and equalizing and maintaining the intracranial pressure, but when a meningeal infection occurs these normal functions are upset, resulting in unusual conditions, which are found in a study of the fluid.

A great amount of fluid from capillary blood vessels is the first effect of a meningeal infection. It is thought by some that this is a manifestation of the body's defense against the oncoming infection. An increase of lactic acid in the cerebrospinal fluid is noted in the very early stages of meningitis. This condition is also true of the blood plasma, especially during fever, although the lactic acid content of the former is four times that of the latter. The result of this increase lessens the alkaline reserve and drives off carbon dioxide from the carbonates. In meningitis then there is a greatly lowered pH and a decreased bicarbonate content. The second stage of meningitis involves the changes in the brain tissue, the cells of the choroid plexus, the perineural and perivascular spaces. An abnormal amount of cholin is found in the fluid caused by the impediment of the cell functions. Fisher's theory that "the cause of edema is to be found in the accumulation of acid products in the tissues," is still questioned, but in regard to this particular stage being discussed, it is apparently verified.

If life is to be saved, the diagnosis must be made early before the lesion has had time to progress and before the cell destruction has reached the vital centers. Because the hazards surrounding otitic meningitis are many it is apparent that early diagnosis in a meningitis of this origin is of the greatest significance if a favorable prognosis is to be given.

The gravity of the lesion is not shown by the findings of a physical examination, no matter how carefully done. It can only be fully revealed by an examination of the cerebrospinal fluid. The prognosis is best in those cases which have no impediment to the ready escape of the fluid at the time of the spinal puncture. A fluid which escapes sluggishly probably is hindered by exudates, mechanical obstruction between the ventricles or a concentration of the fluid due to the increased cell content. This original monograph is accompanied by charts which illustrate the various points made in the discussion.

Temperature After Mastoidectomy. Henry P. Johnson, M.D., Portland, Me. *Archives of Otolaryngology*, June, 1934.

One hundred cases of consecutive mastoidectomies are examined "for the immediate effect on the temperature produced by the operation, the variations

of the temperature curve after operation in the uncomplicated cases, the duration of the postoperative fever in the uncomplicated cases and the day on which it was the highest, the postoperative day of the onset and termination of an unusual fever, the variations of the temperature curve in the complicated cases and the effects produced in the temperature as a result of the treatment instituted in the complicated cases."

The temperature curve during the first twenty-four hours following operation showed a drop in sixty-nine cases. The postoperative temperature curve in uncomplicated cases showed sixty patients with an uneventful recovery; it also showed in fifty-three cases that the average time for the running of temperature was five days. Harris believes that postoperative rise in temperature of a moderate amount is customary in mastoiditis and that without other symptoms fever is without significance and should not be a source of anxiety. The temperature curve following operation in cases of preoperative complications is of interest only in that it is an indication of the progress of the patient. The postoperative temperature is of much more importance clinically than the preoperative rise. It is a very definite sign showing onset of postoperative complications which calls upon the surgeon's skill in differential diagnosis to determine the cause of the temperature. Every possible source of infection should be carefully considered and grave consideration given before the patient is subjected to the additional perils of a second operation.

Complications occurred in thirty-six cases. The most common complication was otitis media and mastoiditis of the opposite side. Nineteen cases in the series of one hundred were so affected. This is one of the first things which must be ruled out when we have an unexplained rise in temperature soon after operation. If the mastoid wound becomes infected, i. e., stitch abscess, cellulitis or erysipelas, it usually occurs in the first three or four days. Erysipelas may cause much concern before the rash appears. In a sinus thrombosis, which occurs later, the patient appears well, while in erysipelas the patient is prostrated. The temperature in sinus thrombosis is intermittent while in erysipelas it is high or remittent. Dixon states that the etiological factor in erysipelas is operating too early in the course of the disease. Evidence from this series of cases refutes this statement.

Cervical adenitis is another confusing factor entering into postoperative temperatures. The patient may have no complaints which would lead the surgeon to suspect an adenitis as the cause of the sudden rise in temperature. Diagnosis is made by exclusion of other possibilities and daily inspection for enlarged and tender glands. Infections of the respiratory tract are usually confined to bronchitis, which is most prevalent, and tonsillitis. Infection of the lateral sinus occurs in about three to six per cent of the operative cases of mastoiditis according to Campbell. The literature of today fully describes the various phases of sinus thrombosis which usually appears at least seven or eight days or later postoperative. Involvement of the kidneys should not be overlooked as a possibility to account for the temperature.

An unusual instance of a pelvic abscess complicating a mastoidectomy, during which the lateral sinus was accidentally opened, is cited. Details are not overlooked in this report and when they were not available the fact is mentioned by the author.

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
LeRoy Long Clinic
714 Medical Arts Bldg., Oklahoma City

Hyperparathyroidism and Generalized Fibro-Cystic Ostitis (Hyperparathyroidie et Osteite Fibro-Kystique Generalisee). By A. Ravina and Simone Lyon, *La Presse Medicale*, June 23, 1934.

This article is a concise review of the relation of hyperparathyroidism to diseases of the bones in which there is a remarkable loss of calcium. The subject has been treated in a most enlightening way by American authors, but attention is called to it here because of the desirability of a clearer understanding of the etiology.

There are references to the theory of von Recklinhausen to the effect that cystic disease of the bones (von Recklinhausen's disease, first described in 1891) was due to nutritional disturbances; and to the theory of Erdheim that adenoma of the parathyroid was a secondary manifestation. This is quickly followed by a reference to the report of Mandl in 1926 where there was striking improvement in the case of a patient suffering of von Recklinhausen's disease after the expiration of a parathyroid tumor; and associated with the improvement there was striking decrease of blood calcium and of calcium in the urine.

The authors remind the reader that the normal blood calcium varies from 12 to 20 milligrams to 100 cc., but that in cystic disease of the bones it may reach 23.6 milligrams; that at the same time there is a drop in blood phosphorus and a tremendous increase of calcium in the urine—sometimes six to eight times the normal amount.

Comment: I believe that it may be said that hyperparathyroidism alone, without neoplasm, occupies a very doubtful position in relation to hypercalcemia and loss of bone calcium. To put it another way, it appears to be pretty clear that the surgical removal of the parathyroids will be of no service in von Recklinhausen's and kindred disease unless they contain adenomata.

—LeRoy Long.

Compression of Trachea by an Adenomatous Goiter Situated in the Thoracic Inlet. By W. A. Plummer, *Proceedings of the Staff Meetings of The Mayo Clinic*, July 11, 1934.

In cases of goiter situated in the thoracic inlet, error occurs frequently in estimating the size of the goiter and the extent of the mechanical difficulties which it may produce. Unless a goiter so situated consists of a single adenoma that can be grasped as it moves upward during deglutition, it cannot usually be palpated in its entirety, and, if no substernal goiter is demonstrated roentgenologically, the size of the tumor may be underestimated. Furthermore, the thoracic inlet forms a bottle neck in which a relatively small goiter may produce subjective and objective evidences of tracheal compression. It must be remembered, however, that small goiters which are entirely cervical in situation may, under certain conditions, distort or compress the trachea. The tracheal insult may be in the form either of lateral displacement from a unilateral adenomatous goiter, or of constriction from the wedging effect of a bilateral goiter, or it may be an anteroposterior deformity from a retrotracheal goiter.

In this article Dr. Plummer emphasizes the occasional importance of two diagnostic procedures that he believes are not fully appreciated: First, the change in the inspiratory sound, and second, the change in outline of the trachea as demonstrated by roentgenologic examination. Slight changes in the inspiratory sound, produced by distortion or constriction of the trachea, usually are not recognized by the examining physician. Frequently the sound has not been apparent to the patient himself or to members of his family, even though it is so intense that it would be obvious to a stranger, because of the fact that it develops gradually. It may be referred to as a slight stridor. As the term "stridor" is ordinarily used, however, it conveys an impression of magnitude and of quality that certainly is not descriptive of the respiratory sound the writer referred to. Moderate distortion or constriction of the trachea produces only a slight exaggeration of the inspiratory sound, with a change in pulse that may be referred to as hollow: it defies description and must be heard repeatedly in varying intensities to be recognized readily.

In all cases of adenomatous goiter in which the growth is of any appreciable size, the examining physician should make a deliberate effort to elicit the characteristic sound by having the patient inspire quickly and deeply with the mouth open. Frequently this characteristic sound will be most noticeable when prolonged inspiration with the mouth open is involuntary, as at the end of a fit of laughter, a paroxysm of coughing, or at the end of a long sentence, even though inspiration is not forced and the mouth is only slightly open.

When examining roentgenograms of the thorax in cases of goiter, one should note not only the presence or absence of substernal enlargement, but also the form and position of the trachea. The trachea is usually well outlined in the routine roentgenogram of the thorax, but it may be entirely obscured in certain deep-chested individuals. In the occasional case it may be advisable to take both anteroposterior and lateral roentgenograms of the trachea, using a special technique which consists of a longer exposure and the use of the Potter-Bucky diaphragm.

—LeRoy Long, Jr.

Urinary Calculi Associated With Parathyroid Disease. By S. H. Colby, *Journal Surgery, Gynecology and Obstetrics*, August, 1934, P. 210.

The fundamental problem in the consideration of urinary tract calculi is the prevention of recurrence. The great clinics of this country report from twenty to forty per cent recurrence in nephrolithiasis after operation. The surgical removal of the calculi without any attempt to discover the reason for its growth must lead to recurrence in many instances. Thus we are led inevitably to a discussion of the causes of urinary lithiasis.

First, as regards the urine itself, we know that here is the extraordinary phenomenon of an extremely supersaturated solution which does not obey the ordinary laws of chemical solutions. In a 24-hour amount of urine there is a greater quantity of salts than could possibly remain in solution in an equal volume of water. The ability of the urine to hold salts in solution is said to be due to the presence in the urine of protective colloids. They prevent the precipitation of the salts and inhibit the formation of calculi. If the colloids are diminished in amount, or if their action is interfered with as by chemical changes such as occur in stagnant urine, the protective mechanism is lacking and the excess of free salts

is precipitated with a resulting formation of urinary calculi.

Stone formation in the urinary tract, therefore, is the result of an abnormal precipitation of the crystalline elements normally present in the urine. The causes of the abnormal precipitation are probably multiple.

There is considerable evidence that obstruction plays an important part in stone formation. The importance of infection as a cause of stone formation is difficult to evaluate. Diets deficient in vitamin A, prolonged for some time, cause crystalline deposits in the urinary tract of laboratory animals. Such dietary deficiency experiments go far to explain the geographical incidence of stone, such as its prevalence in certain parts of India and China.

It has been proved that the parathyroid glands effect calcium metabolism. Total extirpation of these glands causes a fall in the serum calcium and results in tetany. Within recent years it has been shown that tumors of the parathyroid cause marked metabolic changes with a loss of bone calcium, elevation of the serum calcium, and increase in the urinary output of calcium. The resulting bony changes, decalcification, cysts, benign giant cell tumors, and spontaneous fractures, characterize the condition known as generalized osteitis fibrosa. Crystalline deposits occur in the urinary tract with such frequency in this disease that the association of the two is more than coincidence.

The pouring out of calcium from the body through the urinary tract seems to result in stone formation in many patients with hyperparathyroidism. Very likely the marked increase in urinary crystalloid in this condition places such a burden on the protective colloid mechanism of the urine that stones are apt to form. How important a place urinary stasis assumes in this evident tendency to stone formation in parathyroid disease is not yet determined, but there is evidence that obstruction is a considerable factor.

Serum calcium and serum phosphorus estimations have been performed routinely at the Massachusetts General Hospital for some time in these cases of nephrolithiasis. As the association between urinary tract stones and parathyroid disease is more generally appreciated, many more instances of a similar nature are certain to be recognized.

Tumors of the parathyroid cause metabolic disturbances which result in a marked increase in the urinary output of calcium, a decrease in the output of phosphorus, and lead to the formation of stones in the urinary tract in many instances. While generalized osteitis fibrosa is frequently accompanied by urolithiasis, it is important to recognize the fact that stone formation occurs often in the urinary tract without any of the bone changes which characterize this disease, although tumors of the parathyroid are present and are the underlying cause of the stone formation. Unless the parathyroid tumor is removed stones will frequently occur.

—LeRoy Long, Jr.

Relief of Intractable Pain, by the Intraspinal (Subarachnoid) Injection of Alcohol. By Elias Lincoln Stern, M.D., New York City. *The American Journal of Surgery*, August, 1934, P. 217.

Dr. Stern presents a method for the relief of excruciating pain of a chronic nature. He reports fifty cases where intraspinal subarachnoid injections of 95 per cent alcohol were employed with relief of pain and no ill effects.

He points out objections to paravertebral nerve blocking in the relief of severe chronic pain as follows:

1. Usually the somatic nerves affected are numerous. Therefore to block all the afferent pathways involved, one would have to block motor nerves as well.

2. Very often fibers of the sympathetic nervous system are involved in addition to the cerebro-spinal nerves. It is difficult to effectually block sympathetic fibers paravertebrally.

3. Paravertebral blocking is usually accompanied by some pain and shock and is time-consuming.

"The method of relieving intractable pain by injecting small quantities of alcohol intraspinaly into the subarachnoid space is a safe, quick, painless, non-shocking procedure. While no serious complications have resulted in my experiences, if the procedure is not done properly, serious, if not fatal results may occur, as demonstrated experimentally in lower animals."

The author then outlines in considerable detail the important anatomical features of the spinal roots, the intraspinal membranes and the cerebro-spinal fluid as a fundamental basis for the technic of the procedure.

The principle of the method depends upon the fact that the specific gravity of alcohol is enough lower than that of the spinal fluid to allow it to rise to the top and the injection is made slowly using from 4 to 16 minims of sterile 95 per cent alcohol with the patient's spine flexed laterally and partially rotated so that the alcohol surrounds principally the posterior nerve roots.

He then describes in minute detail the technic for the spinal injection of alcohol.

In most cases the relief of pain was quite remarkable, usually noticed immediately, but occasionally not until one to seven days after the injection. The usual length of time in which there was complete relief was from one to eight months, with an average duration of about three months. He reports in his fifty cases, 70 per cent with complete relief, 30 per cent with partial relief and 10 per cent with no relief.

"In no case has there been any loss of muscle, tendon, or joint sense; no loss of synergic control of muscles; no loss of equilibrium; no loss of automatic control of muscle; and no trophic ulcerations of any kind.

"In no case has there been any motor paralysis, although transitory motor weakness may be complained of when the larger doses of alcohol are used. A transitory sensory paralysis of the bladder and rectum may occur with injections between the second and third lumbar spines. This can now be avoided by limiting the dose at this level to 8m."

The abstracts of nineteen cases of cancer given as follows:

"Carcinoma of stomach.....	2
Carcinoma of cervix.....	5
Carcinoma of prostate.....	4
Carcinoma of rectum.....	4
Sarcoma of pelvic bones.....	2
Bronchiogenic carcinoma of lung.....	1
Sarcoma of tibia with x-ray ulceration.....	1"

The author writes the following conclusion with the observation that the effect of the alcohol upon the sympathetic fibers suggests a possible treatment

in diseases and disorders of the sympathetic nervous system:

"The procedure when successful is invaluable in the relief of chronic, painful conditions. A single, subarachnoid alcohol injection may give relief for as long as eight months. It obviates the necessity for using narcotics in large doses, and diminishes the possibility of making drug fiends of chronic invalids. By relieving pain, it allows more intensive x-ray, radium, or other medical treatment to be given, and so tends to prolong life."

—Wendell Long.

Intraspinal (Subarachnoid) Injection of Absolute Alcohol, for the Control of Pain in Far Advanced Malignant Growths. By Harry C. Saltzstein, M.D., Detroit, Mich. *Journal American Medical Association*, July 28, 1934, P. 242.

This author very briefly compares the advantages of subarachnoid injections of absolute alcohol for the control of pain in far advanced malignant growths over cordotomy and division of the superior mesenteric plexus.

He reports eleven cases and of these one was not relieved but the others were greatly benefited by the procedure.

He gives abstracts of illustrative cases and reports a small number because he feels it is a very valuable procedure and that it should be used more extensively, especially in terminal cases where there is a life expectancy of weeks only.

Comment: In far advanced, incurable malignant disease, excruciating pain is frequently a very distressing situation to patient, family and doctor. These reports of alcohol injection into the subarachnoid space with relief of pain and no untoward effects suggest a simple method for this very disturbing condition. It is perfectly obvious that one should thoroughly familiarize himself with the principles and the technic of the procedure before it is employed. It is also obvious that certain ill effects may be expected if this method is employed upon a large scale.

—Wendell Long.

Obstructions of the Choledochus by Enlarged Glands (Les Obstructions du Choledogue par Adenopathies). By Marcel Brule and Jean David, *La Presse Medicale*, June 30, 1934.

Remarking that it is well understood that there may be pressure upon the common duct (choledochus) by enlarged glands associated with malignancy and tuberculosis, and in which operative procedure would be useless, the authors discuss obstructions of the common bile duct due to pressure by adenopathies due to benign and non-tuberculous inflammatory processes.

Several case reports are presented, and they are illustrative of the hypothesis and arguments of the authors.

A robust boy of fifteen years was seen in the eleventh week of a profound jaundice. At that time there was neither pain nor fever. There had been a little fever just before the appearance of the jaundice. The various analytic procedures, including x-ray examination, were negative. The border of the liver was smooth, slightly tender to palpation, and extended below the rib margin to the extent of the breadth of three fingers.

Believing that the smooth and enlarged liver, without fever, was more indicative of an obstruction of the common duct in some way not associated with prolonged infection, a surgical exploration was advised. At operation an enlarged lymph gland, the size of a cherry stone, at the junction of the cystic with the hepatic duct, was pressing firmly upon the latter. The gland was extirpated, after which it was possible to recover bile by puncture with a hypodermic needle below the point of obstruction. The jaundice disappeared, and recovery seemed to be complete. The pathological examination of the extirpated gland revealed only a hyperplastic reaction, without any evidences of malignancy.

Another case reported is that of a woman thirty-six years of age. In August, 1924, after confinement, there were epigastric pains, fever and jaundice. The jaundice was not very pronounced, but persistent. She was seen in December by Professor Lecene. There was at that time some jaundice, with irregular fever. At operation the gall bladder and pancreas appeared to be sound, but there were several enlarged glands about the bile ducts. In this case recovery followed a cholecystostomy. One of the glands removed at the time of operation had the histological structure of chronic inflammation.

A young man of twenty-one had had nausea and vomiting and pain in the stomach for about two months. He had lost over twenty pounds. An operation was done for the purpose of relieving what was supposed to be an ulcer of the duodenum. It was found that stomach, duodenum, gall bladder and all appeared to be normal, but at the place where the common duct passes behind the duodenum it was compressed by three enlarged glands, one of which was hard and calcified. These glands were removed and the patient recovered. The glands presented the histological structure of chronic inflammation.

Comment: One must not be misled by statements that are too dogmatic but, at the same time, this article calls attention to a possible explanation of persistent jaundice due to obstruction of the common duct by pressure from removable enlarged glands on the outside of it.

The second case reported is not exactly in point. Since recovery followed a cholecystostomy, it is a reasonable conclusion that there was chronic inflammation of the gall bladder, and that it was most likely associated with an involvement of the adjoining biliary tract, the enlarged glands being the result of the inflammation, and reducing in size after drainage of the gall bladder had cured the inflammation.

One must remember, too, that in operating it is not wise to tinker too much about the bile tract area. The extirpation of glands about the duct is usually not very difficult, but there is always a possibility of getting into embarrassing situations through the wounding of important structures, like the portal vein. To sum up, I am in entire accord with the general tenor of the authors' general statements, but call attention to the wisdom of having some definite plan of procedure which should be carried out with circumspection.

—LeRoy Long.

Trauma of the Thorax and Pulmonary Tuberculosis (Traumatisme du Thorax et Tuberculose Pulmonaire). By N. M. Stoichitza, Bucharest, *La Presse Medicale*, June 30, 1934.

The author takes the definite position that trauma

of the chest may be the exciting cause of the more or less rapid development of tuberculosis.

It is believed that tuberculosis following trauma is a pretty rare condition. The statistics quoted by the author vary a good deal. For example, he quotes certain writers to the effect that trauma is the exciting cause in about 1 3-10 per cent of the cases of tuberculosis, but this is followed by the opinion of Pilod who believes that the per cent is much lower, it being estimated as about 1-100 per cent.

It is not believed that the development of pulmonary tuberculosis is very often excited by penetrating wounds, most of the cases following severe contusion of the chest. This is the opinion of Professor Sergeant who made some investigations dating from 1916, and the conclusions of Sergeant are supported by the work of Ribadeau-Dumas, Devic, Cordier, L. Bernard and Mantoux.

In 1929 Pilod reported the case of an aviator who, following a severe contusion of the chest in an accident, had hemoptysis, and several months thereafter there was a frank pulmonary tuberculosis.

It is remarked that the beginning of pulmonary tuberculosis after an injury may be characterized by hemoptysis, pneumonia, or pleurisy, but it has been the common observation that there is practically always hemoptysis, regardless of the subsequent pathology.

It is the conclusion of the author, and those investigators quoted by him, that in practically all the cases there is a latent tuberculosis before the trauma, the trauma furnishing a field for the development of germs theretofore confined in a clinically healed area.

In the average case, the clinical signs of tuberculosis appear between three and six months after the trauma, and in the average case the evolution is rapid and grave. It is not believed that a tuberculosis which develops as long as a year after a trauma is often, if ever, associated with the trauma.

In support of the thesis of the author, the case of a laborer 57 years of age is reported. He was seen a few days after an accident when he was struck by a heavy piece of wood below the left clavicle. The blow was so heavy that he was knocked down, and there was immediate hemoptysis. He came for examination because of persistent pain, and he was anxious to know whether there had been fracture of the ribs. A physical examination disclosed only the signs of a chronic bronchitis with a certain degree of emphysema.

An x-ray examination was made. It did not show any evidence of fracture. Incidentally, there was a good negative of the lungs which presented the x-ray findings common at his age—that is, a little thickening about the hilus with some calcified nodules and the accentuation of the general net work. Notwithstanding these findings, there was continuation of thoracic pain and progressive loss of weight and strength. Six or eight months later there was both physical and x-ray evidence of progressive tuberculosis involving the left lung. Numerous bacilli were found in the sputum. He was sent to a sanatorium where it was advised that an artificial pneumothorax be employed. The patient refused. The condition became progressively worse, and in about seventeen months after the injury there was death following a frightful hemoptysis.

Another case is reported of a house man (garçon de Salle), 44 years of age. There was a history of a penetrating wound, by a knife, immediately be-

low the left clavicle ten months before. The records showed that the wound had healed, and that an examination at that time, including an x-ray examination of the chest, did not show any evidence of pulmonary disease. According to the history there was an hemoptysis that lasted for four days after the injury, and the patient never did feel well afterwards. He began to cough in about six months after the injury, lost the appetite, and rapidly reduced in weight and strength. He had been seen by another physician about that time, and a diagnosis of pulmonary tuberculosis, left lung, was made. The physical and x-ray findings were characteristic, and the sputum contained many bacilli. At the time of this report, there was slight improvement in the condition of the patient.

In his argument, the author emphasizes the fact that both these patients were perfectly well before the injuries.

Comments: Professor Gosselin has explained the mechanism through which there may be rupture of the lung without fracture of the skeletal structures. Through an involuntary effort the glottis is closed at the time there is a blow upon the chest, thus increasing the pressure on the inside of the lungs. In the case of a person under thirty or thirty-five years of age, the ribs are elastic, so that there might be great damage of the lungs without fracture of the ribs. However, as pointed out by Gosselin, it is not common for a severe injury of the lungs to take place as a result of a severe contusion, without fracture of the ribs, in older persons.

The first case reported by the author seems to be quite convincing, except for the fact that the patient was 57 years of age. The assumption that there might have been an injury of the lungs sufficient to produce a severe hemoptysis, without fracture of the ribs, is hardly reasonable, for the reason that the ribs have relatively little elasticity at 57 years of age.

At the same time, I consider this an important contribution, because it is well known that the bacilli of tuberculosis may remain dormant in scar tissue for many years, and that they may become active if the scar tissue is damaged. I have observed this on several occasions in connection with the manipulation of a healed tuberculosis of the hip or knee, such manipulation being frequently followed by a reactivation of the tubercle bacilli.

—LeRoy Long.

INTERNAL MEDICINE

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L. J. MOORMAN

The Incidence of Tuberculosis Infection Among Children in New York City. Godias J. Drolet. The American Review of Tuberculosis, July, 1934.

In reviewing the data compiled from clinical examinations of nearly fifteen thousand children, made over a period of three years, the author is able to conclude that the incidence of tuberculosis in children in large cities is markedly decreased when compared to incidence a generation ago. A further bit of optimism is his demonstration that beside this lessened incidence of infection, there is a tremendous lessened incidence of mortality.

These statistics are considered from every possible angle, and the frequency of infection of the varying age groups, sex groups, racial groups, and groups of

children with known and unknown exposures, is reported in great detail.

It is shown that in New York, as in Chicago and Detroit, that in the entire mass of children examined by tuberculin and roentgenological tests, only 13.7 per cent were found to have positive infections. Of these, 4.3 per cent of the babies under one; 9.3 per cent of all those under five years; 19.1 per cent of those from five to ten; and 29.2 per cent of those from ten to fifteen years, were infected.

No appreciable difference between the sexes could be distinguished, but racial differences were pronounced. The negro children not only showed an incidence of infection more than double that of the white, but their mortality rate trebled and quadrupled the death rate of the white children. It was shown that there could be little real difference in the exposures of the two races, and hence this widely varying finding must be accounted for by some inherent difference in the races.

History of contact made a decided difference in the number of positives found when testing a group. This variation was most marked in the younger children, when, of course, intimacy of home contact is greater and going about more limited. Seasonal influence made little difference in determining the incidence of tuberculosis, but the mortality is much higher in the late winter.

In considering the mortality, it was found that an annual average of 354 deaths from tuberculosis among all children under fifteen occurred in New York City during the three year period of 1930-1932, a mortality rate of 21 per 100,000. One-third of the deaths was of colored children, though that group is but one-twentieth of the total child population. The death rate of the colored children was ten times that of the white children. Among young children, the male mortality exceeds the female, and even with infection less frequent in early childhood than later, the highest death rate occurs then.

The author attributes the rapidly declining incidence of tuberculous infections among children to the increasingly effective control of home sources of tuberculosis, especially in the city, where more than twelve thousand patients are rushed annually to tuberculosis hospitals and sanatoria, whether they are bed cases or not. He concludes that instead of a universal infection of all persons who have attained twenty years of age, there are now more than two-thirds of young adults wholly free from the disease.

The Lymphatic Reaction in Tuberculosis. Bruce K. Wiseman and Charles A. Doan. *American Review of Tuberculosis*, July, 1934.

In this study an analysis of the qualitative changes occurring in the lymphocyte, which the authors believe to directly reflect the functional state of the lymphopoietic centers, has been applied to disease. Tuberculosis has been chosen to furnish as the initial experimental and clinical test of this hypothesis.

In the experimental studies, it has been possible to follow the entire natural history of this disease, and it was found that a varying efficiency in the response of the lymphatic tissues from time to time was reflected by changes in the circulating lymphocytes, which in turn seemed to represent a very fair measure of the adequacy of the general immunological reactions of the animal.

A judicious interpretation of both qualitative and quantitative data is attempted in order to bring about the fullest understanding. A parallel series of clinical

patients were observed at the same time the animal experimentations were being carried out, and the data assembled from the two groups are carefully compared and an attempt at correlation is made.

In all these studies, the lymphatic response has been far more sensitive, and has preceded other evidence of a changed status in the disease than any other criterion thus far used. It may thus be of distinct prognostic significance. Additional evidence is furnished in these studies of the direct part played by the lymphocyte in the cellular defense of the body against tuberculosis.

It is pointed out by the authors that emphasis is to be placed upon repeated examinations in the same patient, with exquisite technical precision rather than a single casual observation, if the full significance of the procedure is to be recognized.

The Role of Atelectasis in Pulmonary Tuberculosis. Barnet P. Stivelman. *American Review of Tuberculosis*, July, 1934.

The author demonstrates that contributory causes to the essential etiological factor in the production of atelectasis, namely, the complete obstruction of the respectively draining bronchus, are:

1. Inflammatory processes in the larger or smaller bronchi, causing accumulation of viscid secretion, which interferes with normal function of the ciliated epithelium.
2. Pain in the chest, or lower abdomen, which causes shallow respiration.
3. Administration of narcotics to ease pain which abolishes the cough reflex, and so militates against adequate pulmonary ventilation and drainage.
4. The prone position, which interferes with normal respiratory function.

He further demonstrates that atelectasis in tuberculosis is much more frequent than the literature would suggest, for in the case of tuberculosis there may be added to the above list the very common occurrence of pneumothorax, either spontaneous or artificial.

The author then discusses atelectasis under the headings of Acute Massive Atelectasis, which is rare except in profuse pulmonary hemorrhage; Chronic Massive Atelectasis, which is common in chronic inactive or benign tuberculosis of young persons, and is frequently associated with bronchiectasis; and Lobular Atelectasis, which the author states to be the most prevalent and the least appreciated form. Of the last type, he says, the most favorable areas are the lower aspects of the upper lobes, anteriorly, and particularly on the right side. It is also frequently encountered in the retrocardiac area, though it may occur at any place. In the latter position it is frequently mistaken for a nonspecific infection of the lower lobe, and in the former for an exudate at the upper right interlobular area, or a pneumonic consolidation of tuberculous origin.

Chronic Massive Atelectasis in Phthisis is most often confused with extensive unilateral pleuropulmonary fibrosis. Patients so affected may run a benign course, but, when dyspnea develops as a result of extensive mediastinal deflection, they can be effectively treated with artificial pneumothorax. Confluent lobular atelectasis is said to occur very frequently and early in the course of the disease, and

to encourage local fibrosis by producing a local tissue respiratory deficiency.

The author entertains the theory that tubercle bacilli, being strictly anaerobic, are markedly attenuated when deprived of an adequate amount of oxygen. Lobular atelectasis by impairing the local circulation, materially diminishes the available oxygen supply in the area involved and so adversely affects the growth of the tubercle bacilli.

To the fact that all forms of atelectasis are seen in lungs treated with artificial pneumothorax is attributed the rapid fibrosis of lesions under collapse therapy.

C. E. BRADLEY

Nasal Sinus Disease in Children. L. W. Dean, M.D., St. Louis, Mo. *Southern Medical Journal*, Vol. 27, No. B., May, 1934, Pages 418-421.

Infections of the nasal sinuses in children are of great importance in pediatrics. In almost every instance in which infection of the tonsils plays an important part in systemic disease, the condition of the nasal sinuses must be taken into consideration. Children with arthritis or heart disease who receive no benefit following a tonsillectomy, should be examined for infection in the nasal sinuses.

It is difficult to examine the nasal sinuses in children without an anesthetic. The x-ray is not a definite procedure although it tells whether or not the sinus is present or if it is of sufficient size to be of clinical importance. A blurred sinus on the x-ray plate, together with the presence of inflammation about the ostium of the sinus or in the pharynx would suggest infection.

An important procedure in diagnosis is a bacteriological and a cytological study of the nasal discharge taken from the ostium of the sinus. The presence of eosinophils in this discharge suggests allergic rhinitis. A predominance of polymorphonuclear neutrophils indicates infection.

Many cases of asthma who have sinuses examined get relief only after the chronic sinuses are treated.

Chronic sinusitis is often associated with malnutrition, bronchiectases, Still's disease, pyelitis, nephritis, lung abscesses, diphtheria carriers, headaches, and frequent colds.

The first step in the treatment of nasal sinus infection is to remove the cause. Infected lymphoid tissue must be removed from the naso pharynx. Allergic conditions must be ruled out and corrected. Endocrine disturbances have to be considered. Hygienic, dietary and sunshine therapy should be carried out. Operative work on the sinuses in children is not often indicated unless a systemic condition indicates haste in the eradication of the infection. In children under ten years of age it is rare to consider the sphenoidal or the frontal sinuses. Not in more than one out of a hundred cases is it necessary surgically to attack the ethmoidal labyrinth and this should be done only when there is osteomyelitis present.

In 99 per cent of children with chronic nasal sinus infection and systemic complications, the surgical procedures in the nose are limited to the removal of obstructing lesions and to making a very small window in the nasal wall of the maxillary sinus for ventilation and drainage.

Sinus Thrombosis and Thrombophlebitis Complicating Mastoiditis: Case Reports. E. G. Gill, M.D.,

F.A.C.S., Roanoke, Va. *Southern Medical Journal*, Vol. 27, No. 8, August, 1934, Pages 718-728.

Sinus thrombosis is the most common of the intracranial complications of the inner ear and mastoid infections, and because it does not always follow the course outlined in text books is particularly interesting.

When there is a rise in temperature accompanied by a rise in lymphocytes in a known mastoid infection when other systemic conditions have been ruled out, it may generally be considered that the infection has reached the blood stream. Blood cultures should be taken every twenty-four hours, preferably before the chill and rise in temperature. About 75 per cent of the cases should give a positive blood culture. However, a positive or negative culture should never be the sole determining factor in surgical management of a suspected case.

A daily blood study is of great value in tracing the course of infection and indicating the advisable times for transfusions. Usually the leucocyte count parallels the severity of the infection. Absence of eosinophils indicates a severe systemic infection, and their return is often the earliest favorable sign.

Bacteriological study of drainage from the mastoid, urine, and spinal fluid, as well as of the blood, should be made. *Streptococcus hemolyticus* seems to be most frequently the organism involved.

Medical and surgical treatment may both be effectively used depending upon the case. Transfusion of whole blood frequently and in small amounts is probably the most effective medical treatment. Generally if the hemoglobin content is 60 per cent or below transfusion is indicated. *Antistreptococcus serum* and *mercurochrome* have not been effective in the treatment of our cases. Small doses of *nearsphenamine* given at weekly intervals have seemed beneficial, and the intravenous administration of saline and glucose is often helpful.

Surgical treatment consists of removing the primary focus of infection by mastoidectomy; prevention of the spread of the infection by the drainage of the vein involved; and treatment of any metastasis. Our policy is to open the sinus for about an inch, and to drain (never using metallic drainage tubes), and to pack for two or three days only.

Prognosis depends upon the effectiveness of the surgical treatment, the timeliness of the medical treatment, together with careful postoperative observation, avoidance of over-exertion, exposure to cold, and general hygienic measures. Death may result from emboli in the lungs or elsewhere, meningitis, pneumonia, and general toxemia.

The cases cited were of school children under nine years of age—all with *streptococcus hemolyticus* infections. They received a combination of surgical and medical treatment, and all except one recovered.

Sensitivity to Fungi in Infantile "Eczema." Lewis Webb Hill, M.D., Boston, Mass. *American Medical Journal*, Vol. 103, No. 5, Pages 331-334.

There are many factors in etiology in so-called "Infantile Eczema" and there is no clear understanding of the disease. In the past few years fungi have been mentioned more as the causative factor in many skin diseases.

Monilia albicans is frequently found associated with deep crusty and scaly type of skin lesions involving the trunk, inner sides of thighs and scalp in a high percentage of cases of infantile eczema, and when an intradermal injection of 1-10 cc. of a

1-100 dilution of an extract of a pathogenic strain of *monilia albicans* causes an area of induration and redness similar to the positive reaction in the tuberculin test, after forty-eight hours, you can be quite certain that the fungi is the exciting agent.

If the reaction is positive the treatment is quite different than that due to food allergy and other unknown causes, hence all cases of eczema should be given the *monilia albicans* intradermal test.

It is a very easy and simple procedure. The reaction occurs forty-eight hours following the injection and remains several days.

Thymic Dangers. Roy E. de la Houssaye, M.D., New Orleans, La. *Southern Medical Journal*, Vol. 27, No. 8, August, 1934, Pages 694-698.

The thymus gland at times constitutes a real danger to the infant, and should receive prompt treatment.

The gland arises from the third bronchial pouch, and lies in a compartment of the cervical fascia of the mediastinum. It is a lymphoid structure which gradually disappears, and its function is very obscure.

Several case histories of children who developed symptoms associated with an enlarged thymus, such as cyanosis, head retraction, dyspnea, and syncope, demonstrate that enlarged thymus glands may be a definite menace. Roentgenograms showed enlarged thymus glands in each of these cases and they responded satisfactorily to Roentgen ray and radium therapy.

Each of these types of treatment has its dangers. It is difficult to administer Roentgen ray because it is difficult to hold the child in an exact position. Administering the ray to the wrong area would be useless and often dangerous. Radium therapy should be used only by those thoroughly familiar with it. A slight deviation in the distance from the skin makes a great difference in the dosage and effect of the element. However those who have used both Roentgen ray and radium prefer the latter because in competent hands it can be administered effectively without pain or alarm to the patient.

Dr. Houssaye considers the term status lymphaticus comparable, if not inferior, to the old inquest verdict, "died by the visitation of God," and prefers "cause unknown" as an explanation of death to a term whose identification is so unscientific.

HUGH JETER

Mercury Poisoning. S. M. Rosenthal, M.D., Washington, D. C. *J. A. M. A.*, Vol. 102, No. 16, P. 1274.

"It has thus been established that: (1) Sulphoxylate is a compound of low toxicity that can persist in the body for several hours after intravenous injection, in concentrations that confer on the blood the ability to reduce corrosive mercuric chloride to insoluble mercurous compounds, which are known to be considerably less toxic; (2) when injected intravenously the major part of the sulphoxylate is excreted in the urine within a few hours, which means that high concentrations are reached in the kidneys; (3) following oral administration in sufficient quantities sulphoxylate can persist throughout the gastrointestinal tract so that it can render local protection and also reduce to insoluble compounds any unabsorbed mercury that may be present; (4) a high percentage of dogs can be saved from a fatal oral dose of corrosive mercuric chloride and can be protected against renal injury if oral and intravenous therapy

is given within an hour and a half after the poisoning.

"I have had occasion to administer this therapy in ten cases of corrosive mercuric chloride poisoning in human beings. The results have been confirmatory of the experimental observations and justify a report at this time in order that this therapy may be given wide spread clinical trial."

Comment: This comparatively inexpensive drug (sodium formaldehyde sulfoxylate) is available and seems deserving of a clinical trial as suggested by the author. As a strong reducing agent it is supposed to reduce corrosive mercuric chloride into insoluble and less toxic mercurous salts and to metallic mercury. The low toxicity of the drug seems to be satisfactorily established.

Small Intestinal Intubation: Experiences with a Double-Lumened Tube. T. Grier Miller, M.D., F.A.C.P., and W. Osler Abbott, M.D. *Annals of Internal Medicine*, July, 1934.

"Several workers have accomplished small intestinal intubation in man. McClendon and his associates, in 1920, reported on the hydrogen ion concentration of the contents aspirated from two subjects, but their technic required four days for the tube to reach a level at most four or five feet below the pylorus. None of their methods has led to extensive investigation or important results. Recently, however, we have developed a technic that seems practical, and that, we believe, may eventually be applied in a more or less routine fashion.

"We have introduced the tube into the small intestine for a distance of 100 cm. or more in seventy-five persons, doing in all more than 100 intubations. At first we failed in about 50 per cent of the attempts, due chiefly to inability to traverse the pylorus within a reasonable time, but, since using the Morgenstern technic, have been successful in fully 80 per cent. In no instance with the balloon deflated, have we had any difficulty in removing the tube by mouth. Some of the subjects have been ward or out-patients; others, unemployed individuals to whom we paid small fees.

"Thus we have referred to various experiences with a new method of studying the secretory and motor functions of the human small intestine to indicate the value of the technic, and have presented certain data that confirm results obtained previously only by animal experimentation. It is believed that further experience will lead to simplification of the technic, making it available eventually for the study of pathologic conditions of the small bowel."

Comment: These investigators have used a double-lumened tube capable of being visualized by the x-ray, and which will furnish evidence of motor and contemporary chemical function. The fact that the entire extent of the small intestine of the human can be thus studied, surely will yield valuable information, as to normal as well as pathologic function of the intestinal tract.

Carcinoma of the Pancreas. Ford K. Kick, M.D., and Harold M. Mortimer, M.D., Chicago, Ill. *J. of Laboratory and Clinical Medicine*, Vol. 19, July, 1934, No. 10.

"In an attempt to determine the frequency and symptomatology of carcinoma of the pancreas we have reviewed fifty cases proved at autopsy, seen during the period from January 1, 1925, to January 1, 1933. The records are from the Cook County

Hospital, and a smaller number are from the Research and Educational Hospital. The majority of the autopsies were performed by Dr. R. J. Jaffe, pathologist at the Cook County Hospital. Clinically diagnosed cases, even those confirmed by laparotomy but not proved by necropsy, are omitted because of the great difficulties in diagnosis. Metastatic carcinoma of the pancreas is not mentioned.

"1. Primary carcinoma of the pancreas comprises 5.3 per cent of all carcinomas. It occurs one-fourth as frequently as carcinoma of the stomach.

"2. Carcinoma of the body and tail is as common as carcinoma of the head of the gland.

"3. The most frequent symptoms of carcinoma of the pancreas are pain, weight loss, anorexia, jaundice, and nausea with vomiting. Diarrhoea is quite rare.

"4. Carcinoma of the head of the pancreas produces in three-fourths of the cases a progressively intense, moderately painful jaundice due to obstruction of the common bile duct. This cannot be differentiated from carcinoma of the biliary passages, a much more common lesion.

"5. Carcinoma of the body or tail of the pancreas may be a presumptive diagnosis in the patient who is suspected of having an intra-abdominal malignancy and who presents boring epigastric and upper lumbar pain partly relieved by postural changes, provided that no other primary tumor can be demonstrated. The presence of diabetes further supports this diagnosis.

"6. The early occurrence of widespread metastases and the rapid progress of the disease make the treatment purely palliative."

This is an interesting study of pancreatic carcinomata. G. Gordan Taylor of London, England, in the *Annals of Surgery*, July, 1934, also makes an interesting report on the surgery of cancer of the pancreas and reports a case which was satisfactorily operated.

The University Hospital of Oklahoma City, Oklahoma, has from July, 1921, to July, 1934, had 1343 carcinoma cases, of which forty-four cases or 3.28 per cent were thought to be primary in the pancreas.

BOOKS RECEIVED

DISEASES OF THE EYE FOR STUDENTS AND GENERAL PRACTITIONER: By Charles H. May, M.D., Director and Attending Surgeon, Eye Service, Bellevue Hospital, New York, 1916 to 1926; Consulting Ophthalmologist to the Mt. Sinai Hospital, to Bellevue Hospital, to the French Hospital, New York, and to the Monmouth Memorial Hospital; formerly Chief of Clinic and Instructor in Ophthalmology, College of Physicians and Surgeons Medical Department, Columbia University, New York. Fourteenth Edition, Revised. 376 Original Illustrations, including 25 Plates, with 78 Colored Figures. William Wood & Company, Baltimore, Md., 1934. Price \$4.00, Cloth.

DISEASES PECULIAR TO CIVILIZED MAN, Clinical Management and Surgical Treatment: By George Crile, M.D. Edited by Amy Rowland. The Macmillan Company, New York, 1934.

THE DANGEROUS AGE IN MEN: A Treatise

on the Prostate Gland: By Chester Tilton Stone, M.D. The Macmillan Company, New York, 1934.

THE SURGICAL CLINICS OF NORTH AMERICA: Chicago Number, Volume 14, Number 4, August, 1934. W. B. Saunders Company, Philadelphia.

SURGERY OF A GENERAL PRACTICE: By Arthur E. Hertzler, M.D., Chief Surgeon, Halstead Hospital; Professor of Surgery, University of Kansas, and Victor E. Chesky, M.D., Chief Resident Surgeon, Halstead, Kansas. 472 Illustrations. Cloth \$10.00. C. V. Mosby Company, St. Louis, 1934.

MODERN CLINICAL SYPHILOLOGY: By John H. Stokes, M.D., Duhring Professor of Dermatology and Syphilology, University of Pennsylvania; Member, Commission on Syphilis and Cognate Diseases, League of Nations Health Organization. Second Edition, Revised & Entirely Reset. 1400 pages with 973 illustrations and Text Figures. Philadelphia and London: W. B. Saunders Company, 1934. Cloth \$12.00 net.

A PRIMER FOR DIABETIC PATIENTS. A Brief Outline of the Treatment of Diabetes with Diet and Insulin, Including Directions and Charts for the Use of Physicians in Planning Diet Prescriptions: By Russell M. Wilder, M.D., Professor and Chief of the Department of Medicine of the Mayo Foundation, University of Minnesota; Head of Section on General Metabolism, Division of Medicine, the Mayo Clinic. Fifth Edition, Reset. 172 pages. Philadelphia and London: W. B. Saunders Company, 1934. Cloth, \$1.75 net.

SPINAL ANESTHESIA, Technic and Clinical Application: By George Rudolph Vehrs, M.D., Salem, Oregon. Illustrated. The C. V. Mosby Company, St. Louis, 1934. Price \$5.00.

A TEXTBOOK OF GYNECOLOGY: By Arthur Hale Curtis, M.D., Professor and Head of the Department of Obstetrics and Gynecology, Northwestern University Medical School; Chief of Staff and Chief of the Gynecological Service, Passavant Memorial Hospital, Chicago. Second Edition, Reset. 493 pages with 300 original illustrations, Chiefly by Tom Jones. Philadelphia and London: W. B. Saunders Company, 1934. Cloth, \$6.00 net.

A TEXT-BOOK OF HISTOLOGY: By Alexander A. Maximow, Late Professor of Anatomy, University of Chicago, and William Bloom, Associate Professor of Anatomy, University of Chicago. Completely revised with 662 pages with 530 illustrations, some in colors. Philadelphia and London: W. B. Saunders Company, 1934. Cloth, \$7.00 net.

THE MODERN PHYSICIAN SURVEYS THE ECONOMIC CHANGES

Today the age-old and venerable profession is confronted by myriads of problems and changes in economies. Many physicians are now faced with a new trend in economic pressure that has been brought about by the telephone, automobile, radio and the industrial age with complicated machinery. The world-wide depression has so wounded the standard of living of the doctor that it will take many years to heal.

Some of the existing conditions which have un-

derminded the doctor's income at present are as follows: Private business corporations use as their key-word to the doctor, when solicited, that their products are only advertised to the practicing physician. After the commercial products have been popularized through the medical man's prescriptions, the promises of these money making corporations are forgotten. Subsequently, these companies begin advertising campaigns over the radios and, by a series of advertisements in all sorts of periodicals, never forgetting to mention that the medical profession encourages its use. The city physician has developed a poor habit of writing patent medicines because it helps him to save time by not having to calculate the dosage of all the ingredients. Patients, however, rapidly lose confidence in such practices and soon they learn to ask for such medications over the counter of the drug store. Then we have the unscrupulous advertisers over the radio through which channels much incorrect information is given to the public by quacks who either run their own clinics or are highly paid by commercial enterprises.

The physician, as a rule volunteers without charge

to treat deserving poor patients in dispensaries, but the hospitals, however, do not have adequate social service assistance to investigate those who do not deserve charity. Nevertheless, there is unfairness on the part of a good number of hospitals in not protecting the physician's economic status.

At times the medical profession is exploited by several small private incompetent health insurance companies which work on a basis of profit. The companies of varied sources offer doctors very small annual fees and in return large numbers of families are attended by the overworked and underpaid poor physician who usually does very inferior type of work because of the tremendous amount of petty responsibilities. Also, there are numerous societies, lodges and endless benevolent and fraternal organizations which work on the very same principles and the helpless doctors fall for such insignificant tactics. There are numerous other causes which limited space does not permit the writer to mention at this time.

There are various groups and cults taking advantage

REPORT OF EXAMINATION FOR LICENSES TO PRACTICE MEDICINE

Examination held at State Capitol, Oklahoma City, June 6th and 7th, 1934. The following applicants passed:

Name	Year of Birth	Place of Birth	School of Graduation	Year of Graduation	Home Address or Previous Location
Mishler, Donald Lloyd	1904	Centerville, I.	Listie, Penn.	1929	Tulsa, Okla.
Morgan, Wm. Gregory	1901	Bedford, Ky.	Univ Iowa	1927	Holdenville, Okla.
Morris, Myron Louis	1888	New York, N. Y.	Univ of Louisville	1913	Hugo, Okla.
West, Charles I. Jr., (Col.)	—	Washington, D. C.	Bellevue Hos Med	1933	Tulsa, Okla.
Cox, C. P.	1873	Ft. Blackman, Va.	Howard Univ	1898	Ninnekah, Okla.
*Coppedge, Orville N.	1902	Jennings, Okla.	Louisville Med.	1933	Bristow, Okla.
*Jobe, Virgil Ro	1902	Lincoln, Ark.	Univ. of Okla.	1933	Muskogee, Okla.
*Reed, Karl Asbury	1902	Guthrie, Okla.	Univ. of Okla.	1933	Okla. City.
*Shiflet, Albert Woods	1906	Lebanon, Mo.	Univ. of Okla.	1933	Okla. City.
*Bard, Thomas John	1910	Merkel, Tex.	Univ. of Okla.	1933	Norman, Okla.
*Sturm, Charles Edward	1905	Marysville, Mo.	Univ. of Okla.	1933	Okla. City
*Tisdal, Wm. Charles.	1907	Cordell, Okla.	Creighton Univ.	1933	Elk City, Okla.
*Angus, Donald Adelbert	1907	Lawton, Okla.	Univ. of Okla.	1933	Okla. City
*Curb, Delos Griffith	1897	Leon, Okla.	Univ. of Okla.	1933	Okla. City
*Craft, Wilma	1908	Vermont, Ill.	Univ. of Okla.	1933	Okla. City
*Funk, Gustavus DeLana	1904	Maryville, Mo.	Univ. of Okla.	1933	El Reno, Okla.
*Haynie, Weldon Geiller	1907	Aylesworth, Okla.	Univ. of Okla.	1933	Durant, Okla.
*Perry, Fred Thomas	1908	Texas	Univ. of Okla.	1933	Okla. City
*Rogers, Galen Alonzo	1906	Waynoka, Okla.	Univ. of Okla.	1933	Nicoma Park, Ok.
*Traverse, Clifford A.	1908	Byron, Okla.	Univ. of Okla.	1933	Okla. City
*Watson, Price Thorne	—	Erick, Okla.	Univ. of Okla.	1933	Blair, Okla.
*Huggins, James Richard	1904	Chickasha, Okla.	Univ. of Okla.	1933	Okla. City
*Hackler, Harold Waton	1906	Westville, Okla.	Univ. of Okla.	1933	Pryor, Okla.
*Bailey, Carl H.	1909	Ft. Worth, Tex.	Univ. of Okla.	1933	Okla. City
*Hoover, Wilkie Dee	1908	Wynnewood, Ok.	Univ. of Okla.	1933	Tulsa, Okla.
*Luton, James Polk	1907	Lindsay, Okla.	Univ. of Okla.	1933	Okla. City
*Parsons, Orval Loewen	1907	Enid, Okla.	Univ. of Okla.	1933	Okla. City
*Ray, Raymond Gerald	1907	Downs, Kans.	Univ. of Okla.	1933	Tulsa, Okla.
*Smithson, Carl Bryan	1896	Alva, Okla.	Univ. of Okla.	1933	Okla. City
*Lambke, Phil Milam	—	Byron, Okla.	Univ. of Okla.	1933	Okla. City
*Reed, Charles Wesley	1909	Okla.	Univ. of Okla.	1933	Okla. City
*Edgar, Cecil Carl	1904	Canute, Okla.	Univ. of Okla.	1933	St. Joseph, Mo.
*Speed, Henry K. Jr.,	1909	Sayre, Okla.	Baylor Univ.	1933	Sayre, Okla.
*Fryer, Samuel Richard	1910	Muskogee, Okla.	Univ. of Okla.	1933	Okla. City
*Eads, Chas. H.	1903	Mt. Carbon, W. V.	Univ. of Okla.	1933	Tulsa, Okla.
*Butts, Imogene	1909	Holdenville, Ok.	Univ. of Okla.	1933	Holdenville, Okla.
*House, Rex Clayton	1909	Carnegie, Okla.	Univ. of Okla.	1933	Okla. City
*Messenbaugh, Joseph Fife	1911	Okla. City	Univ. of Okla.	1933	Okla. City
*Ford, Harry Cummings	1908	Middletown, Mo.	Univ. of Okla.	1933	Tulsa, Okla.
*Sturgeon, H. Violet	1908	Hennessey, Okla.	Univ. of Okla.	1933	Okla. City
*Russell, Lum Elbert	1910	Cyril, Okla.	Univ. of Okla.	1933	Okla. City
*King, Everett Giddings	1910	Colony, Okla.	Univ. of Okla.	1933	Duncan, Okla.
*Ruth, Weldon Kenneth	1909	Okeene, Okla.	Univ. of Okla.	1933	Okeene, Okla.
Ingles, Anson Benjamin	1875	Navajo, Ariz.	Kansas City Med	1896	Globe, Ariz.
Bynum, Wm. Turner	1910	Okla. City	Northwestern	1934	Okla. City
DeMotte, Mary Alice T.	1902	Phillipsburg,	Washington Univ.	1930	Ponca City, Okla.
DeMotte, John Allan	1904	Kans.	Washington Univ.	1930	Ponca City, Okla.
Hetherington, Lloyd P.	1903	Hopkins, Mo.	Univ. of Neb.	1930	Pawnee, Okla.
Mall, Werner Walter	1905	Atwood, Kan.	Univ. of Neb.	1932	Ponca City, Okla.
Paulson, Alvin Winfred	1907	Clay Center, Kan.	Washington Univ.	1932	Clinton, Okla.
Shorbe, Howard Bruce	1909	Dill Rapid, S. D.	Northwestern	1934	Okla. City
*Peter, Maurice Lyle	—	Coalgate, Okla.	Univ. of Okla.	1933	Okla. City
*Darrough, James Breese	1910	Oxford, Kan.	Univ. of Okla.	1933	Vinita, Okla.
*MacLeod, Sherburne	1906	Vinita, Okla.	Univ. of Okla.	1933	Hooker, Okla.
Kreger, Glenn Smith	1909	May, Okla.	Univ. of Penn.	1933	Tonkawa, Okla.

*Those who took the examination in 1933, but license not issued until internship was completed.

age of the doctors' lack of interest in the welfare of the medical profession, and so these strings of cults are constantly exploiting humans in their misery for their financial gain. The medical societies are weak without the individual physician's interest and understanding, as there must be concerted effort on the part of the medical profession to help solve these problems rather than allow those who are out of the profession to dictate what ought to be done.

Since there is an approach to an oversupply of physicians in this country, there should be proposed a moratorium by the American medical schools which will aid in the equalization of distribution of physicians. Dispensaries should be put out of business if they are of a commercial nature; which can be done by having a state law passed prohibiting commercial dispensaries from making a charge to use clinics or medicines. A specialist or general practitioner should never use patent medicines for prescribing. There are too many age-old, useful drugs in the materia medica and pharmacology textbooks; students now at medical schools should be admonished against the evil practice of patent drugs. The druggists and the physicians should have mutual understandings and never infringe upon each others' fields. Cheap contract lodge practice, either on a small or large scale, is a pernicious, destructive economic force and should not be tolerated by medical societies. In short, the art of medicine has been constructed on basic principles of truth for which men in the past century have fought valiantly. We, too, must try and uphold those very fine principles

and ethics which help to make our profession stand out characteristically from all the rest.

—M. Martyn Kafka, M.D.

(Reprint from New York Medical Week, March 3, 1934.)

SERIOUS ARSPHENAMINE REACTIONS WITH REFERENCE TO THEIR PREVENTION: REPORT OF SIX CASES

Maxwell Scarf, Philadelphia (Journal A. M. A., June 30, 1934), reports six cases of serious arsphenamine reactions, in one of which aplastic anemia developed under neoarsphenamine therapy when two injections were given after purpura appeared. In one of two cases of hepatitis, one injection of neoarsphenamine was given after the patient complained of itching. Hemorrhagic encephalitis occurred as a complication in a case of gonorrheal arthritis with a negative Wassermann reaction in which two doses of neoarsphenamine were given in increasing doses, although an eruption followed the first dose. In a case of aneurysm of the aorta, rupture followed neoarsphenamine therapy, which was too vigorous and not preceded by a preparatory course of the milder anti-syphilitic drugs. A case of transverse myelitis, due to a rare and usually fatal form of Herxheimer reaction, terminated in complete recovery. From these reactions the author concludes that a large proportion of fatal or disabling reactions may be prevented by a careful evaluation of symptoms and signs as they appear in syphilitic patients under treatment with the arsphenamines.

The Selection of a Physician

The selection of a physician for an operation or as a family doctor, is usually made with some care. We consult those who have employed physicians and are governed largely by their recommendations. But having selected a physician, we follow his advice. We trust him even to the extent of submitting to operations that may have serious results. The point is, we trust **THE MAN WHO KNOWS.**

Now, doctor, the institutions and the firms advertised in this Journal were carefully investigated before their announcements were printed here. The medical products were submitted to laboratory tests, before they were accepted by the Council on Pharmacy and Chemistry.

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THE JOURNAL

OF THE
OKLAHOMA STATE MEDICAL ASSOCIATION

VOLUME XXVII

McALESTER, OKLAHOMA, OCTOBER, 1934.

NUMBER 10

CRIPPLING FROM ACCIDENTS*

W. K. WEST, M.D.
OKLAHOMA CITY

In children there are four major conditions due to accidents which may result in permanent disabilities:

1. Fractures.
2. Infections.
3. Nerve Injuries.
4. Burns.

Fractures in children are very common and usually do not result in permanent deformity. They may be classed as those occurring first, in the shaft of the long bones and, second, those fractures which involve the important joints. Favorable results may be expected in fractures of the shaft of the long bones in the great majority of cases because nature is so kind repairing this type of bone injury. But, unfortunately, a small percent of them result in some degree of permanent disability. Of all long bone fractures, those about six inches below the hip tend to be our most serious; they end in deformity and shortening of the leg to the extent of serious disability.

In order to prevent shortening and bowing of the long bones of the leg, it is necessary to use some type of traction. This is usually in the form of a weight attached to the leg in such a way as to maintain a continuous pull, thereby overcoming the muscle contractions and holding the bones in an end-to-end position. For the past few years the Kirschner wire technique used in conjunction with the Braun frame, has been found in our clinic to serve as the best means of applying a weight to long bone fractures. By using

an extension hand drill, a fine steel wire is passed thru the lower end of the long bone just above the joint. A Kirschner steel bow is screwed down to each end of the wire and a sash cord is used as a connection between the bow and the weight. Prior to the introduction of this newer method, adhesive plaster had been used for many years. It is still the method of choice where fractures are treated by men who treat them only occasionally, as the equipment necessary in the up-to-date fracture clinic is too complicated and too expensive for the average general practitioner.

In smaller communities the best method is simply to apply adhesive plaster to the leg to which, by means of a cord, a weight, usually a small sack of sand, or window weights are attached. This method, known as Buck's extension, is very successful in the majority of cases, but there is always a percentage of bad results such as overriding of the fragments with shortening of the bone, or union of the fragments with a bowing of the leg. In either case, there is marked deformity and resulting disability. Because of the end-results being very doubtful in fractures of the long bones of the leg, in our State the general practitioners refer a great many of them to the Crippled Children's Hospital at the time injured, where the necessary equipment and specialized training of the surgeon, together, are able to successfully treat these cases and have very few poor results. However, the length of time following the accident has considerable to do with the successful treatment. For example, a fracture of the shaft of the femur, if treated within a few hours after

*Read before the thirteenth annual convention of The International Society for Crippled Children, held at Montreal, Canada, May 20-26, 1934.

the accident, responds much more favorably to treatment than one in which the case is sent in two or three weeks later with overriding of the fragments and an increasing shortening of the leg.

Fractures in the shaft of the long bones of the arm are not so difficult for the average practitioner to treat and, in case the result is one of slight deformity or slight shortening, the disability is not nearly so great as in the leg.

Fractures involving the important joints are more serious as a rule than fractures of the shaft of the bones. The chief reason for their being serious is the fact that fractures of the joints, especially the elbow, knee and the ankle, should be reduced within a few hours after the accident. In case the child is a great distance from proper medical aid, by the time the patient reaches the proper hospital, the joint is so swollen that a proper replacement of the fragments is impossible. As a result, it is necessary to wait several days and at the end of that time the fragments have become fixed more or less. Any attempt to replace them has met with marked resistance because of muscle contraction, and operations on fractures of the joints may be unsatisfactory because considerable damage is done to the ligaments, tendons, and blood supply, in mechanical procedure of replacing the bone fragments. Operation is oftentimes impossible because of skin wounds which are always potential sites of infection until well healed.

Therefore, proper early treatment should consist of first, the taking of a good x-ray in all questionable joint injuries; second, the immediate reduction of the fractures; and, third, an x-ray should always be taken following the emergency treatment and be repeated in those cases in which it is deemed necessary.

Deformities of long standing in children, due to fractures, are usually favorable types for correction. In those cases of the leg in which there is loss of proper alignment of the bone without shortening, a simple instrumental refracture is sufficient for a normal weight-bearing line. Older children often are referred to the orthopedic clinic because of a marked bowleg or knock-knee. A simple operation is sufficient to completely correct the deformity. However, if there is shorten-

ing of the leg, a more serious operation known as "leg lengthening" is done.

Occasionally, bone graft operations are necessary because of the bone fragments failing to unite. In the past, metal plates, screws, and wires have been used to hold the ends of the bones in proper position, but, unfortunately, it has been our experience to find that a great many of these cases end in non-union of the bone. Bone grafts, providing the hospital and staff are equipped for this kind of work, are much more successful and no more hazardous.

Infections result in very serious deformities due usually to interference with normal function of joints and muscles. Fortunately, serious infections are much rarer than fractures. The most common causes for serious infections are:

1. Gunshot wounds.

2. Puncture wounds in the joints, such as resulting from children playing with scissors or knives and sticking them into the wrist, hand, knee, or foot.

3. Serious automobile accidents in which there may be compound fractures associated with severe wounds of the skin and soft parts.

In order to be successful, the treatment of infections must be instituted immediately in the form of hot packs, splinting for local rest to the affected member, and the giving of proper stimulants to assist the body resistance. In case abscesses develop, immediate thorough drainage should be done. After the wounds have healed, artificial heat, massage and careful exercises should be carried out. In orthopedic centers this work is done on a large scale and is known as physical therapy. Stiff joints in children respond most satisfactorily to this treatment.

During the hunting season there is always a few serious gunshot wounds in older boys. These cases should be treated systematically, the first thought always being to save the life of the patient, the second to save the limb and, in case there is the usual shattered bone, an effort should be made to treat the extremity in such a way as to obtain bony union with as little shortening as possible. If there is joint involvement, some limitation of motion of this particular joint is always expected. In a high percentage of gunshot cases of the extremities, especially shotgun injury, it

is impossible to save the foot or the hand. It is to the advantage of the patient for the surgeon to make an early decision because a satisfactory stump for the fitting of an artificial limb is very important. In other words, if the forepart of the foot has been shattered by a shotgun, it is best to do the amputation immediately before infection sets in; otherwise the amputation might have to be done much higher with a great increase in the resulting disability. The amputation should be done high enough to obtain healing of the soft parts without infection, as an infected stump always results in dense adherent scars which are quite tender and do not stand the pressure of an artificial limb comfortably.

Puncture wounds into joints are always serious because of the danger of infection which destroys the smooth joint surfaces and ends in the joint being stiff. Puncture wounds into the palm of the hand or the sole of the foot may cause infections which bring about abscess formation due to destruction of the tendon structures. The smooth surfaces of the tendons and the tendon coverings lose their smooth gliding function and become fixed in one great dense scar, thereby interfering greatly with the use of the fingers or the toes.

Nerve injuries are always very serious because every main nerve trunk has a distinct function to perform in controlling muscle action. For example, nerve trunks are most often injured in automobile accidents in which the arm or the leg has been cut by windshield or other glass. In injuries of the upper arm, the radial nerve is often severed and if it is not properly united, the patient will have a wrist drop which means that he cannot raise the hand. Or, in case of a severe injury to the knee joint, the peroneal nerve may be divided; the patient cannot raise the foot, and in attempting to walk with this type of partial paralysis, there is a most decided limp in addition to the marked weakness of the lower leg and foot. Therefore, the patient should always be examined carefully at the time of the accident for nerve injuries and immediate surgical repair should be done whenever possible.

Burns are a serious result of accidents. As a rule, they are classified under the heading of plastic surgery and the more serious burns about the neck and face

have to do with disfigurement rather than disability. But, burns are of interest to the orthopedic surgeon because heavy burn scars tend to contract upon healing, thereby causing in some cases complete loss of motion of certain joints such as the shoulder, elbow and knee. While the treatment usually is one requiring skin grafting, appliances similar to the ones used in orthopedic surgery should be used to prevent recurrence of the old fixed position.

The principle of the correction of a fixed flexion contraction of the knee, aside from the plastic work, is just the same in case of a burn as it is in the case of a tuberculosis of the knee itself. Physical therapy is just as important in the restitution of normal joint motion. Therefore, in the treatment of acute burns of the extremities, prevention of the deformity is just as important as the proper healing of the skin itself. Contraction about the wrist with the inability to straighten the wrist or straighten the fingers due to contracted burn scars constitutes a disability so severe that technical use of the hand is lost. In these cases of hand deformities, after the releasing of the scars and the implantation of skin grafts, physical therapy treatment is most necessary to gain return of function relative to the tendons and joints of the fingers.

O

R. B. DAVIS CO. COCOMALT

Clinical tests prove conclusively that pregnancy is a drain upon the woman's calcium reserve. Very often this is manifested by softening of the bony structure * * * including the teeth. It is a well-known fact that pregnant women very often have decaying teeth, and even lose their teeth during pregnancy.

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Cocomalt because of its admixture of milk supplies an abundant amount of calcium and at the same time a sufficient amount of Vitamin D to help mobilize the calcium. Cocomalt is licensed by the Wisconsin University Alumni Research Foundation under Steenbock Patent No. 1,680,818. One glass or cup of Cocomalt, prepared as directed, contains not less than 30 Steenbock (81 U.S.P. revised) units of Vitamin D. It is accepted by the Committee on Foods of the American Medical Association.

NEPHROSIS IN CHILDREN

FORREST S. ETTER, M.D.
BARTLESVILLE.

Nephrosis or parenchymatous nephrosis is a disease of parenchymatous organs of the whole body, characterized by marked oedema, profuse albuminuria with a corresponding decrease in the serum proteins and an elevation of the blood lipoids. The nephroses fall into two main groups: (1) primary or Epstein's "lipoid" nephrosis, and (2) secondary nephrosis.

The pathology of this process involves every tissue and organ of the body. In the kidney the changes in the tubules vary in intensity from cloudy swelling to necrosis of the cells with the replacement of scar tissue. There is a salt retention by the tissues with a low blood and urine concentration of salt. The blood cholesterol is increased five times that of normal and the lipemia may be of sufficient degree to be detectable in the eyegrounds. The peritoneal, pleural, and pericardial cavities are often filled with ascitic fluid which makes an ideal culture medium for the bacteria which terminates the patient's life.

The oncotic or "colloidal osmotic pressure" of the blood is greatly decreased and proportionately is the permeability of the kidney capillaries for protein increased. Leiter removed the plasma from the blood of dogs, reinjecting the erythrocytes in Lock's solution. On frequent repetition of this procedure the content of the blood is diminished, especially the albumen. Edema develops, and later albuminuria, granular casts and fat droplets are found in the urine, and in sections degeneration of the renal tubules is seen.

Generally there is a lowering of the basal metabolism but this is due to the fact that the water logged cells of the thyroid cannot function properly, rather than that the hypothyroidism is responsible for this condition.

ETIOLOGY

In a disease with such a pathological background one would think of some potent toxic agent as the cause. The views of Marriot and Clansen that nephrosis is a general systemic intoxication is shared

by Wolbach and Blackfan. Chilling or a sudden cold may precipitate this condition. The direct cause is a toxin of bacterial origin generally produced by the staphylococcus and influenza bacillus. That the nasal sinuses are the foci of infection of first rank is proved by the fact that treatment and drainage of these sinuses often removes the edema and stops the albuminuria and that these symptoms return upon reinfection of the sinuses.

Nephrosis has been known to follow a series of boils and I had one case in which improvement was immediate following the opening of both eardrums. The disease establishes a vicious circle. Oedema increases with infection and lowers the resistance of the patient, making conditions favorable for more extensive infection, till a fatal streptococcus or pneumococcus invades the ascitic fluid.

It is believed by some that a toxic, acid, alcohol soluble substance found in the blood and urine of these patients is the direct cause of the albuminuria.

SYMPTOMS

Following a chilling, a severe head cold or mild attack of influenza there is an insidious onset. There is more or less pallor of the skin depending largely upon the degree of the edema. In some cases the skin appears mottled and is cold to the touch. The temperature may be subnormal due to decreased basal metabolism. In the course of a few days to a week the eyelids become puffed and the loose skin about the genitalia becomes greatly distended with fluid.

In one case the mother brought the boy in because of the intense swelling of the scrotum. This was the first intimation she had that something was wrong with the child. The scrotal edema is a good index of how the case is progressing, as it persists after the serous cavity and tissues clear up. Ascites is always present; pleural effusion is less frequent; and pericardial effusion least frequent.

There is a general agreement that ure-

mia does not occur in nephrosis. The severe attacks of headache, vomiting, cyanosis, convulsive seizures, and stupor which may occur repeatedly are due to edema of the brain. There is no increase in blood pressure, as is seen in Bright's disease in adults; nor is there a leucocytosis. After the disease has persisted for some time, a secondary anemia may develop, which may necessitate a transfusion. The chemical and physical changes of the blood are marked. The hypo-albuminosis which occurs in other forms of nephritis reaches its lowest value here. Epstein and others have found that when the plasma protein falls below 5%, edema occurs. The normal is 7%. In nephrosis it may fall as low as 3%; and the less the percentage of blood protein the greater the edema. The N. P. N. of the blood is usually normal, as are the blood sugar values. The lipoids are greatly increased, and the cholesterol may be five or six times normal. The surface tension of the cells is decreased, and oncotic or colloidal osmotic pressure of the plasma is reduced. The urine is scanty and highly colored. The specific gravity is high and the amount voided a day may drop to as low as 100 c. c. There is a great amount of serum albumin and a low concentration of nacl in the urine, and when diuresis sets in the albumin decreases and the salt concentration increases proportionately. Casts of many descriptions are found; granular, hyaline, fatty and casts encrusted with epithelial cells or leukocytes in various stages of disintegration. In this disease the phenol-sulphonaphthalein excretion is good.

PROGNOSIS

The prognosis for any form of nephrosis is not good. In the primary and early secondary types about 70% are reported by Davis to recover, while the late secondary types Wescott and Dennett report fourteen deaths out of fifteen cases. In other words the earlier the disease is treated, the better the prognosis.

TREATMENT

The first consideration should be given to removing any foci of infection which may be found. Nasal irrigations followed by ephedrin instillations often help to promote drainage. These patients do not tolerate surgery well, but the sinuses may be drained under nitrous oxide anesthesia. The elimination of focal infection has a twofold importance. First, it eliminates

what is generally believed to be the cause of the disease, and, secondly, it removes the bacterial harbor which may later cause a fatal peritonitis. The transfusion of whole blood has many advocates. It combats the anemia which is always present, builds up resistance, and, perhaps most of all, helps to restore the oncotic pressure of the plasma so as to cause a migration of the fluids from the tissues into the capillaries. Hartmann and others have promoted marked diuresis by increasing the colloidal osmosis by injecting acacia intravenously.

The next question is what shall we do about the water intake. Marriot has found that these patients do equally as well with enough water to make them comfortable as they do when denied water to the point of thirst. In all cases the salt in the diet should be restricted. I have given to one case E. K. A. (Sharpe and Dohme) and the patient did not miss the nacl. Since there is an enormous loss of albumin from the blood through the urine, a high protein diet is indicated. I feel that next to clearing up the primary infection that this is the most important procedure. Two grams of protein per kilo of body weight should be given daily. These children will take this protein in milk, egg, ice cream and custards readily.

Epstein accounts for its diuretic action through the replacement of the serum proteins and stimulation of metabolism. Cod liver or haliver oil are beneficial in helping to increase resistance to infection. The leafy vegetables should be given liberally on account of their iron content.

As to drugs, the purine diuretics may be used in the absence of fever and haematuria. Diuretin gr. 5 four times a day is useful. I have given thyroid extract as high as gr. lx per day without noting any untoward effects. Filliji thinks that insulin is indicated in any hypercholesteremia not physiologic in origin. Its beneficial action is very doubtful.

Helmholz believes that certain salts which render the urine acid, such as calcium chloride, ammonium sulphate and ammonium nitrate have a very beneficial effect upon stimulating diuresis. He gives as much as 5 grams (75 grains) per day, in addition he combines the use of the mercurial diuretics merbaphen and salyrgan. It is supplied in 1 gm in 1 c. c. ampoules and may be given intramuscularly

or intravenously twice weekly, starting with .2 cc. and gradually increasing to 1 cc. The patient should be watched for the appearance of a bloody diarrhea.

In closing, we should remember that we

have a patient who will be ill for some time and it should be our aim to keep this little patient on a diet of sufficient caloric value to sustain his growth and energy requirements during his disease.

THE TREATMENT OF CRANIO-CEREBRAL INJURIES*

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Fractures of the skull are unique among the fractures of other bones of the body in that fracture of the skull is relatively unimportant. Injury to the brain should receive primary consideration. This trite statement has been made very often and under many disguises, but cannot be over-emphasized. It is only of academic interest to classify or describe the various fractures of the vault or base. It is impractical and of little help clinically to group symptoms in order that one may speak of the syndrome of "concussion" or "contusion." Such classifications lead the inexperienced to institute a set regime of therapy and do not emphasize the fact that each case of skull injury is an individual problem to be treated, if necessary, by a combination of methods. There should be no advocacy of one method of therapy in skull injuries. With the full realization that there can be no hard and fast division of the clinical symptoms which accompany skull injuries, it does become necessary for descriptive purposes to point out certain clinical symptoms which are encountered most commonly.

The most simple type of skull injury encountered is that in which the patient has received a blow upon the head, either by a fall or by being struck by a moving object. The period of loss of consciousness, which immediately ensues, may last from a few minutes to several hours. There may or may not be a laceration of the scalp, and a linear fracture of the vault of the skull may or may not be present. In any event, the period of loss of consciousness is an indication of the severity of the cerebral trauma, provided

that a careful neurological examination has failed to reveal a disturbance of motor function or other symptoms attributable to direct cortical damage.

In a second group of cases, in which the etiological factors may have been exactly the same, loss of consciousness may be accompanied by bleeding and a discharge of cerebrospinal fluid from the ears or nose. Conjunctival and periorbital hemorrhages may be present. Blood may not escape from the ear and yet the tympanic membrane may be bluish-red and bulging from a hemorrhage which has not perforated through the drum. It may be concluded that under such circumstances blood has found its way into the subarachnoid spaces. Contusion and laceration of the inferior surfaces of the frontal or temporal lobes, or a basilar fracture of the skull are present commonly in this group of cases. Damage to the cerebral cortex in these locations may not be accompanied by evidences of motor or sensory dysfunction as is the case in injury to the brain over the convexities of the surface. As a result of the blood in the subarachnoid spaces, the patient may be extremely restless and difficult to control. In addition, there is always a variable degree of rigidity of the neck which is indicative of meningeal irritation. One or more of the cranial nerves may be damaged in these more severe injuries. Not uncommonly the third, fourth and sixth cranial nerves which innervate the extraocular muscles and the facial and acoustic nerves may be damaged directly or become compressed by the formation of a hematoma.

In the third group of patients, depression of the fractured fragments of the skull may be present. The inner or outer table alone may be depressed, or there

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may be a complete solution of continuity so that both tables rest upon the underlying brain. Depressed fractures of the skull may be present with or without a laceration of the scalp. In severe crushing injuries, the scalp may be lacerated severely and the skull fracture may not only be comminuted but some of the fragments may be driven into the brain. In such instances there are tears in the dura mater and destruction of brain tissue, which may be so pulpified as to escape from the wound.

In contradistinction to those clinical symptoms just described in which coma immediately follows the injury, are those cases in which coma appears some time after the injury. There may be a short period of loss of consciousness, followed by a lucid interval with the onset of a second period of loss of consciousness. Or, the patient may have had no loss of consciousness immediately after the injury and then later gradually becomes comatose. This group of symptoms will be recognized as those characteristic of the classical picture of hemorrhage from the middle meningeal artery. Many descriptions have been given of the combination of symptoms involving the pulse, blood pressure and respirations under such circumstances. However, the most pathognomonic sign of middle meningeal hemorrhage is dilatation of the pupil upon the side of the hemorrhage. It should be remembered that bleeding from the middle meningeal artery may occur on the side opposite to that of the skull injury. The importance of this index of increasing cerebral compression which is localized cannot be insisted upon too strongly. If the bleeding occurs slowly, and it is always extradural in these cases, the ensuing coma is slow in developing so that early the patient may be only stuporous. Under such circumstances, careful neurological examination will reveal a weakness of the muscles of the face and arm certainly, and possibly the leg. To request a patient who is stuporous to grasp or to perform gross voluntary movements which require considerable effort is not an accurate method of determining slight differences in muscle strength. One should observe the facial muscles in emotional expressions; the differences in the size of the palpebral fissures, or the tendency of the weak upper extremity to fall away as both extremities are held out-

stretched. It is such slight but definite evidences of motor weakness which corroborate the surmise of an increasing lesion over the opposite side of the cerebral cortex.

Even though the patient loses consciousness rapidly and cannot cooperate in the examination, one may, by careful observation, detect a difference in the tone of the muscles upon the two sides of the body. The upper eyelids may be raised passively and allowed to fall. On the affected side the eyelid may cover the eyeball slowly or not at all, while on the normal side it quickly returns to its original position. Likewise, the arm may be raised over the face or chest of the patient and allowed to fall. Though the patient may not voluntarily move either extremity, the difference in muscle tone may be observed quite readily as the normal arm avoids the face in its descent. Passive flexion of the lower extremities followed by sudden release is a valuable method of eliciting a difference in muscle tone in the legs. The paretic limb falls quickly and in an abducted position; whereas, the normal limb gradually slides into its original position.

Hemorrhage beneath the dura in an amount sufficient to produce symptoms may occur relatively soon after a skull injury, or many months or years may elapse before the gradually developing hematoma produces symptoms. Subdural hematomas are not uncommon and yet, because of the gradual onset of symptoms they are not easily diagnosed. The same methods for the detection of slight differences in muscle tone on the two sides of the body may be utilized in these cases to great advantage. Many cases of chronic subdural hematomas are upon record which have produced symptoms years after a supposedly trifling skull injury. Many times these symptoms have been attributed wrongly to intracranial tumors or an organic psychosis.

Finally, several complications may follow skull injuries which add to the gravity of the patient's prognosis. Every patient who has a discharge of cerebrospinal fluid from the ears or nose is potentially a patient in whom a suppurative meningitis may develop. An apparently simple linear fracture of the skull in which a laceration of the scalp has occurred may be followed by the development of an intracranial abscess accompanied by neurological symp-

toms dependent in their character upon the location and the chronicity of the infectious process. There are many cases upon record in which air has been found within the cranial cavity, or within the cerebrum, upon x-ray examination of the skull. These cases of pneumocephalus follow fractures through the accessory nasal sinuses which extend into the cranial cavity. They are often associated with a discharge of cerebrospinal fluid from the nose.

It should not be assumed that the changes in the pulse, blood pressure, and respirations which accompany skull injuries are not of importance. However, they fluctuate tremendously in individuals who may have similar types of injuries and what is more important they may vary markedly within short periods of time in the same individual. Therefore, while a careful, frequent record of the pulse, blood pressure, and respirations should be kept their greatest value lies in the evidence they provide of the effects of therapy rather than of the aid they give in establishing a diagnosis. It is not uncommon to be misled by a slow pulse in an individual who normally has a bradycardia.

It is to be emphasized again that each patient cannot be filed in any one category of symptoms. A middle meningeal hemorrhage, or subdural hematoma may develop in an individual who received an apparently minor injury to the skull. On the contrary, one with a compound, comminuted fracture of skull with depression of fragments may never suffer a loss of consciousness. Likewise, a patient with an extensive laceration of the scalp received from a blow of comparatively small force may be in shock from a loss of blood. The important point then is to examine each patient carefully for any evidence of cerebral damage; to be alert to the possible onset of symptoms which point to a latent lesion; to evaluate properly those symptoms which are present and finally, to recognize the principles underlying their treatment and the methods which can be employed effectively to aid in recovery.

Before the treatment of skull injuries can be individualized it is necessary to have a knowledge and understanding of the mechanism of the cerebrospinal fluid system.

The cerebrospinal fluid which is pro-

duced largely by the choroid plexuses is poured directly into the lateral cerebral ventricles, which are lined by ependymal cells. That portion of the fluid which is formed by the choroid plexus in the lateral ventricles passes through the foramen of Monro into the third ventricle, and then by way of the aqueduct of Sylvius into the fourth ventricle. From there the fluid passes into the subarachnoid spaces through the two lateral foramina of Luschka and the medial foramen of Magendie. From the dilatation of the subarachnoid space in the midline between the cerebellum and the medulla (cisterna magna) the fluid flows slowly downward into the spinal subarachnoid space. However, at the same time it passes upward more rapidly about the base of the brain where other subarachnoid cisterns are present, and then more slowly over the cerebral hemispheres. This movement of the fluid is facilitated by impulses transmitted to it by the vascular system. According to the present anatomical descriptions, the subarachnoid space in which the fluid circulates is between the arachnoidea and the pia mater. Numerous delicate spider web-like trabeculae project from the arachnoidea to the pia mater. Flat, polygonal mesothelial cells cover the inner surface of the arachnoid, the trabeculae, the surface of the brain and all blood vessels which pass through the subarachnoid space. These mesothelial cells establish a periadventitial fluid channel about each blood vessel which penetrates the nervous system. The subdural space has but a slight relationship to the circulation of cerebrospinal fluid. However, the dura mater and arachnoidea fuse at the points where the arachnoid penetrates the dense fibrous tissue of the dura mater. These are the arachnoid villi, by which the mesothelial cells of the arachnoid come directly beneath the vascular endothelium of the large venous sinuses.

The cerebrospinal fluid then circulates everywhere about the central nervous system; in the ventricles and in the meshes of the subarachnoid space. These channels are lined by special fluid-retaining cells so that a true circulation is maintained. In the arachnoid villi the fluid comes into close relation with the large venous sinuses of the dura mater and it is at this point that absorption occurs. The mechanism of passage of the fluid is

a process of filtration from a point of higher pressure to a point of lower pressure with later experimental evidence to show that the fluid is a dialysate in osmotic and hydrostatic equilibrium with the blood. There is a second method of absorption in which the fluid escapes slowly into the true lymphatic vessels in an indirect manner.

In the presence of trauma to the brain, edema occurs and an actual increase in brain volume follows. Circulation of the cerebrospinal fluid is interfered with, and a rise in cerebrospinal fluid and venous pressure occurs. With the skull and vertebral column as inelastic and rigid containers, the pressure of the cerebrospinal fluid and intracranial vascular pressures have a close relationship. It may be stated that the cerebrospinal fluid pressure varies with the blood pressure but follows more accurately the venous than the arterial pressure. The therapeutic problem is therefore to help re-establish the normal fluid and vascular pressures, and to reduce the increased brain volume brought about by edema.

The treatment of skull fractures may be divided into non-surgical and surgical. By far the larger number of cases fall into the former group, because there are only three indications for surgery in the treatment of skull fractures. These are: (1) middle meningeal hemorrhage; (2) subdural hematomas, and (3) depressed fractures.

NON-SURGICAL THERAPY

The first consideration in the treatment of a patient who has received a skull injury is to combat any shock which may be present as the result of hemorrhage, or from the severity of the trauma. Warmth is the most effective single method in these cases, unless of course bleeding from the scalp or from some other injury has been so severe that it is obvious that a transfusion is required. The recovery from shock, without hemorrhage, which follows a skull injury is usually quite prompt unless the injury is so extensive that death occurs within a short time. This statement indicates that there is a group of skull injuries in which active well-directed treatment is of no avail and death occurs soon after the injury.

When blood or cerebrospinal fluid are escaping from the ears or nose, those cavities should be left alone except for a

loosely introduced piece of sterile cotton to absorb the discharge. No irrigating solutions of any kind should be introduced into the aural or nasal cavities because of the danger of infection. Examinations of these cavities should be restricted to the absolute minimum if practiced at all. The adherence to these strict rules is an excellent prophylaxis against a complicating meningitis.

The patient should be placed in a warm bed with the head flat. The use of an icebag upon the top of the head is of little or no value. The use of an ice glove over a swollen, edematous cheek or eye aids materially in its reduction.

It is not necessary to rush the patient to the x-ray room for films of the skull. Though a depressed fracture is palpated, it is more important to get the patient into a warm bed than it is to subject him to the manipulations necessary to obtain skull films. Moreover, satisfactory films can be obtained by a portable apparatus which may be taken to the bedside. Even under such circumstances the patient's head should not be forced into unusual positions or roughly handled. When the patient has recovered consciousness and is on the mend, carefully taken lateral, antero-posterior and postero-anterior films may be made. The latter often disclose fractures which cannot be visualized in the lateral position.

The second step to be taken is to reduce edema, brain volume and intracranial pressure. There are two methods employed commonly to bring about these results: (1) the administration of hypertonic solutions, and (2) spinal punctures.

HYPERTONIC SOLUTIONS

In 1919, Weed and McKibben¹ reported that cerebrospinal fluid pressure could be markedly altered by the intravenous injections of solutions of various concentrations. They showed that the intravenous injection of strongly hypertonic solutions lowered the cerebrospinal fluid pressure to such a degree that often negative readings were recorded. With hypotonic solutions (distilled water) a prolonged rise in fluid pressure occurred. Accompanying these changes in the fluid pressure, Weed and McKibben² found marked alterations in the volume of the brain, so that the hypertonic solutions produced a small shrunken brain.

These findings have been confirmed

many times both in the laboratory and clinically, so that clinical applications of these phenomena have been developed. Cushing and Foley³ showed that the ingestion of hypertonic solutions reduced cerebrospinal fluid pressure and Foley and Putnam⁴ administered hypertonic solutions intra-intestinally with similar results. Many neurological surgeons have observed the decrease in brain volume at the operating table after the administration of intravenous hypertonic solutions. Weed and Hughson⁵ extended the original observations somewhat in addition to confirming the effects of hypertonic solutions and showed that the cerebrospinal fluid pressure became profoundly lowered, while the sagittal and brachial venous pressures remained about the same. It is, therefore, possible to reduce cerebrospinal fluid pressure without greatly affecting the systemic blood pressure. These changes in the cerebrospinal fluid, effected by hypertonic solutions, have their explanation in the alteration of the osmotic pressure of the blood. The increase in the pressure of the cerebrospinal fluid and in the brain volume may be taken to mean a passage of fluid from blood vessel to tissue. The fall of cerebrospinal fluid pressure and brain volume after the injection of hypertonic solutions points to the attraction of water from the body tissues and possibly from the body fluids.

It was natural that these physiological findings be developed for clinical use. It was found early that hypertonic saline solution was dangerous because of its effect upon the kidneys among other organs. Fifty per cent glucose solution was substituted for intravenous injection. For adults in coma, 100 ccs. of 50% solution should be given intravenously every twelve hours until the patient becomes co-operative. It may then be given as the patient's condition warrants. It should be given slowly and as long as thirty to forty minutes should elapse for the injection of 100 ccs. For children the dosage should not be over 50 ccs. of the same solution and this may be reduced according to the age of the patient. Clinical experience indicates that the same results cannot be obtained by giving 200 ccs. of 25% solution instead of 100 ccs. of 50% solution.

Magnesium sulphate in a saturated solution may be used by a Murphy drip intra-rectal administration. One hundred fifty ccs. every three to four hours may

be given to an adult. In spite of a slow administration, the rectal mucosa soon becomes irritated and the patient begins to expel the solution. If oral administration can be used the solution may be given once every twenty-four hours in a five or six ounce dose. If this is impossible, because of coma, a stomach tube should be passed and hypertonic solutions administered in that manner.

At the same time the intake of fluids should be restricted to that amount which will avoid the equally dangerous results of dehydration. The administration of fluids can and should include liquid foods so that the patient in coma is not allowed to go without food sufficient to maintain his nutrition in a resting state. If necessary these should be given by a stomach tube and a solution of cream, eggs and sugar which contains one calorie for each cubic centimeter of fluid has been found to be very efficient. An adult may be given 600 ccs. of this mixture three times daily. This is not enough at any one feeding to be regurgitated and at the same time furnishes an adequate number of calories.

LUMBAR PUNCTURE

A lumbar spinal puncture may be a valuable aid in the treatment of skull injuries, or at the same time it may be most dangerous.

Blood in the subarachnoid spaces is a source of meningeal irritation, the prominent symptoms of which are restlessness and rigidity of the neck. Both of these symptoms vary with the amount of blood present. Extensive basilar injuries with a large amount of blood in the basilar arachnoid cisterns may produce a clinical condition which simulates experimental decerebrate rigidity.

Unfortunately, it has become a common practice to perform lumbar punctures as a matter of routine to determine the presence or absence of blood in the cerebrospinal fluid. Careful examination of the patient, particularly if there is an escape of blood and fluid from the ears, makes a lumbar puncture for diagnostic purposes unnecessary.

It is in these patients with blood in the subarachnoid spaces that lumbar puncture has its greatest usefulness. An accurate manometric reading should be made of the initial pressure. Removal of the fluid should be done under constant manomet-

ric control, so that the cerebrospinal fluid pressure may not be reduced far beyond the normal, which varies between 180 and 200 mms. of water pressure. The removal of bloody fluid from a patient who is restless and difficult to control produces striking results. This should be repeated at intervals of eight to thirteen hours or less, depending upon the patient's symptoms. It will be found that the fluid becomes less bloody, then xanthochromic and finally clear as the symptoms disappear.

Lumbar punctures are often employed repeatedly to maintain reduced cerebrospinal fluid pressure. While this may be accomplished for a short period, the pressure does not remain lowered. It must be remembered, too, that in addition to an increase of pressure there exists an increase in brain volume and it has been proven that hypertonic solutions reduce both brain bulk and cerebrospinal fluid pressure.

Finally, lumbar punctures done without manometric control and in which there is a sudden reduction of pressure at the lowest point in the spinal fluid system are dangerous. Minute hemorrhages in the brain stem and sudden collapse of the cerebellar tonsils into the foramen magnum may occur with a fatal termination. Especially are these circumstances likely to occur in children. The physiological reduction of pressure by hypertonic solutions is certainly more efficient and less dangerous than the mechanical reduction by spinal puncture.

NURSING CARE AND DRUGS

Patients with skull injuries must be nursed carefully. Many times the patient is restless only because of a distended urinary bladder, or because of bed clothing which has been wet by an involuntary urination. There is perhaps no other one group of patients who generally receive so little careful, detailed nursing attention as the skull injuries, particularly in large charitable institutions. Good nursing, with the judicious use of restraints, will make unnecessary the commonly employed narcotic drugs.

Morphine should be absolutely contraindicated in every case of skull injury. In the first place morphine is a medullary depressant and adds only to the depression of the respiratory and vasomotor centers of the medulla. It is common to see a Cheyne-Stokes respiratory rhythm disap-

pear when morphine has been stopped. Secondly, morphine masks the most valuable symptoms of gradually increasing intracranial compression. It is impossible to judge whether the stupor is increasing or decreasing. The contracted pupils which result mask completely the important pupillary dilatation of a localized hemorrhage. Its only advantage is that it produces quiet, which can be effected in the majority of instances by less dangerous methods. If it is believed that some medication is absolutely necessary, then drugs with less depressant effects upon the medulla should be employed. However, the use of hypertonic solutions; the removal of blood from the meningeal spaces; and good nursing accomplish this result with far more benefits to the patient, but these methods do require detailed care and attention. Recently Kennedy and Wortis⁶ have recommended the administration of caffeine sodiobenzoate, in 0.5 gm. doses every four hours for the reduction of intracranial pressure and have presented good evidence in support of their views.

Every patient with a skull injury, accompanied by coma, should be kept flat in bed at all times for a minimum period of two weeks and this time should be extended in the more severe cases. It has been amply demonstrated that this is an excellent prophylaxis against the disturbing late symptoms of headache and vertigo which many of these patients develop.

SUBTEMPORAL DECOMPRESSION

It should be noted that a subtemporal decompression has not been described as a method of therapy in this group of skull injuries to which by far the largest number of patients belong. No matter how carefully performed and in the hands of a surgeon experienced in handling nerve tissue, some edema will follow this operation. This adds only to that intracranial pressure which already exists. It has been proven that the mortality rate following the treatment of skull fractures in a large charity hospital has been lowered tremendously since the abandonment of decompression operations for the relief of traumatic edema.

SURGICAL TREATMENT

This naturally brings up the question of just what the indications are for surgical treatment. To repeat them they are: (1) middle meningeal bleeding; (2) subdural hematomas, and (3) depressed fractures.

MIDDLE MENINGEAL HEMORRHAGE

The three most characteristic symptoms of this condition are: (1) dilatation of the pupil upon the side of the *hemorrhage*; (2) gradual onset of coma with or without an early lucid interval; and (3) the presence of signs of motor weakness on that side of the body opposite to the dilated pupil. The location of the external injury to the scalp or of the skull fracture must not influence the localizing diagnoses in these cases.

Middle meningeal arteries may vary enormously in their relations between the two sides of the head. The most common type is that which has an anterior and posterior branch which arises from the main trunk as it lies in the middle fossa, near the foramen spinosum, or farther up on the dura mater covering the lateral surface of the temporal lobe. However, there may be two or more branches running anteriorly and posteriorly. The fact that the parent trunk or any of these branches may be torn should indicate definitely the character of the operation which should be performed.

A typical osteoplastic craniotomy operation should be done with the temporal bone as the center of the bone flap. Attention should be paid to all of the meticulous details of such a procedure. There should be no bleeding from the scalp during the operation if proper hemostasis is employed. With the flap elevated the clot should be irrigated away with normal saline solution and the origin of the bleeding discovered. If it is on the surface of the dura, a fine cambric silk suture or a silver clip should be used for ligation. It may be necessary to elevate the dura from the floor of the middle fossa and compress the vessel into the foramen spinosum by bone wax in order to control the bleeding successfully. If very small oozing points still remain on the surface of the dura, small muscle stamps prove very efficient in controlling the bleeding. The bone and scalp flap should be replaced and sutured with the finest catgut or cambric silk sutures, layer by layer. No drainage material should be used if hemostasis has been effected. The bone flap should be so securely fastened that riding cannot occur. Any operative procedure which does not afford a rather extensive view of the middle cranial fossa and the convex sur-

face of the cerebral hemisphere is likely to be accompanied by serious difficulties.

SUBDURAL HEMATOMAS

A rather trivial injury to the head may be followed, in certain individuals, by symptoms of cortical irritation and of increased intracranial pressure due to a subdural hematoma. These symptoms develop after a latent period which may vary from a few hours to months, or years. The hematoma, which is subdural and not extradural, is enclosed in a continuous membrane which may be slightly adherent to the dura but not to the arachnoid. On the arachnoid side this membrane is thin and is covered by a layer of mesothelium lined spaces containing blood and fibrin.

In some cases in which the onset of symptoms is delayed for only a few days following the trauma it may be that the bleeding occurs immediately after the accident and symptoms develop only when the brain becomes edematous. In the more chronic cases, the hematoma may be very thick, olive green and mottled, and this rather characteristic color is transmitted through the dura mater. The exact source of the bleeding is not as yet known accurately. In some instances the subdural hemorrhage is acute and quite extensive so that symptoms are produced immediately. Under such circumstances an extensive dural or cortical laceration proves to be the source of the hemorrhage.

When the presence of a subdural hematoma is suspected an exploratory craniodural opening over one or both hemispheres will give the most reliable evidence of the presence of the clot. Very frequently the hematoma is bilateral. Occasionally, the spinal fluid may be slightly xanthochromic but more often it is normal in appearance. If the diagnosis is verified, an osteoplastic craniotomy with reflection of a dural flap should be done. The clot should be removed as intact as possible. It may be peeled off the underlying cortex rather easily and resembles a fresh piece of liver in its consistency. Here again hemostasis must be very painstaking. If the clot is removed carefully and completely there is little danger of its reformation. On the other hand, cerebral edema may occur in the brain which is suddenly released from a rather long continued pressure. Therefore, it may be advisable to leave a stellate shaped opening in the dura mater over the temporal lobe

and remove the temporal bone from the bone flap, thus affording a decompression opening. The additional use of hypertonic solutions intravenously will aid in the treatment of the patient.

The diagnosis of this condition is often very difficult and a hematoma may be encountered when least expected. Putnam and Cushing⁷ have given a comprehensive description of the chronic subdural hematomas and since the appearance of their article many other reports have appeared in the literature. Only recently, Fleming and Jones⁸ have described a method of drainage for the treatment of these patients.

DEPRESSED FRACTURES

Depression of one or both tables of the skull may occur without any scalp injury. It is sometimes difficult to determine the presence of a depression without carefully made x-ray films of the skull. Often upon palpation the periphery of an extensive hematoma of the scalp will give almost the exact impression of a large depression of the bone. This should always be checked by roentgenograms.

It is the simple depressed fractures which require careful and conservative judgment concerning their treatment. Certainly not every depression of the skull should be operated upon. Rather pronounced depressions of the bone may not produce the slightest neurological symptom. To operate upon each case because of the anticipation of epilepsy or other evidences of a cortical nature is to disregard the small percentage of relationship between these symptoms and extensive skull injuries which was brought out in the great war. If obvious symptoms are present with a depressed fracture, the defect should be remedied. A small scalp flap incision should be made with the depression as the center. Persistent attempts to pry the fragments back into position should not be made. There is no reason why the fragments should not be approached by a rongeur through a burr hole opening in the adjacent normal skull and removed. Less damage to the underlying dura and brain is likely to follow the latter procedure.

Large extensive wounds of the scalp and skull may be accompanied by comminution of the bone fragments, some of which may be driven through the dura mater into the brain along with other foreign materials.

These ragged, lacerated wounds of the scalp should be cleaned with soap and water, irrigated lightly with saline solution and the surrounding scalp should be shaved carefully. The wound should then be converted into a tripod incision and the edges debrided. These three flaps of the scalp may be retracted and the skull injury explored carefully. A tear in the dura should not be enlarged. Pieces of indriven bone, hair or clothing should be removed with a fine forceps. A soft rubber catheter should be passed through the opening in the dura and into the wound in the brain. By irrigating gently through the catheter with sterile saline solution and by gentle suction with a glass syringe and bulb, pulped brain and very small pieces of bone will escape from the wound in the brain.

The scalp incisions should be closed carefully and in layers, particularly over the site of the original laceration. A small rubber tissue drain may be placed in one of the angles of the incision and left for forty-eight hours. The dangers are, of course, the development of a brain abscess and meningitis. The frequency of these conditions is much less in a wound which is converted into one which can be primarily sutured.

TREATMENT OF COMPLICATIONS

Meningitis: Repeated lumbar punctures, when and if a meningitis has complicated the clinical picture, are of great benefit. They provide a method of draining the infected subarachnoid spaces and should be repeated as often as every six hours if necessary.

A careful cell count of each specimen removed should be made and at each puncture the pressure should be reduced to normal or slightly below. In addition, the patient should be given large amounts of fluids by mouth or subcutaneously during a twelve-hour period. During the following twelve hours hypertonic solutions should be given intravenously in addition to lumbar spinal drainage. By this means one may hope to wash out the subarachnoid spaces. Often the exudate of a suppurative meningitis may produce an obstruction in the subarachnoid spaces about the cisterna magna and lumbar puncture will not drain these spaces effectively. This may be determined by a Queckenstedt test, which consists in light compression of the jugular veins with a lumbar puncture

needle and manometer to record the fluid pressure. Normally, light pressure upon the jugular veins is followed by a prompt rise in the pressure and release is followed by a prompt fall. The presence of a block in the subarachnoid spaces between the cranial cavity and the lumbar spinal sac prevents this phenomenon. It may then become necessary to perform a cisterna magna puncture to drain the infected subarachnoid spaces.

The introduction of various types of sera into the spinal canal in suppurative meningitis is of little avail. Pollock⁸ has shown that any substance introduced into the lumbar canal never ascends higher than the medulla, unless an opening be made into the dura over the cerebral hemispheres. Laminectomies with the introduction of a drain into the spinal dural sac have been performed in an attempt to provide drainage in cases of suppurative meningitis. The recorded results have not been sufficiently beneficial to afford much hope in this method of treatment.

Brain Abscess: Abscesses may develop in the tract of the brain injury and are under those circumstances commonly associated with a meningitis. On the other hand, an abscess may occur following an apparently trivial scalp and skull injury, but one which has produced a small tear in the dura mater.

As in all intracranial abscesses, the treatment and its success depends upon the chronicity of the infection and the ability of the brain to wall off the infection. Abscesses which have a surrounding wall may be drained by repeated punctures, or by the introduction of a small tube into the cavity. Those which are more acute do not offer a favorable prognosis nor a field for successful surgical therapy.

Pneumocephalus or Aerocele: A fracture of the skull which passes through the paranasal sinuses or mastoid air cells may be accompanied by air within the cranial cavity. Sneezing, coughing, straining or swallowing is necessary to force air through the bony and dural defect into the cranial chamber. The air may be located within the subarachnoid spaces; the subdural space; the brain or the ventricles. Air may often fill the frontal lobe and extend backward into the parietal lobe. The shadow is usually round or oval and projects backward from the frontal lobe. The cavity always communi-

cates with the frontal or ethmoid sinus by an opening which may be so minute as to be overlooked easily. The symptoms of aerocele are mainly those of increased intracranial pressure. A cerebrospinal fluid discharge is usually present and rhinorrhea after sneezing or a change in posture is almost pathognomonic. X-ray films will furnish an absolute diagnosis. Dandy¹⁰ has reported twenty-eight cases of aerocele and has suggested an operative method by which a transplant of fascia lata is used to repair the dural tear.

POST-TRAUMATIC SYMPTOMS

The most common complaint of patients who have apparently recovered from a skull injury is headache. The majority of patients complain of generalized pains in the head which are not well localized and which are increased by changes in posture. A smaller number complain of well-localized headaches which are persistent and unchanging in their location. The first group may be benefited most in a prophylactic manner by insisting that the patient remain flat in bed for a minimum period of two to three weeks. Penfield¹¹ has shown that the second group of patients have a collection of fluid in a localized portion of the cerebral subarachnoid spaces. In his opinion this accounts for their severe headaches. He has provided relief for these patients by substituting air, introduced by lumbar puncture, for the fluid. The air is later absorbed.

Dizziness, which must be differentiated from a true vertigo, is also a common complaint. Upon close questioning of the patient it may be developed that the complaint is really of unsteadiness upon stooping or looking upward. If the patient remains flat in bed for a sufficiently long period, this symptom is less likely to be present. True vertigo, in which objects rotate about the patient or vice versa, may follow a basilar skull fracture in which the eighth cranial nerve is injured.

Residual symptoms due to organic lesions of the central nervous system depend entirely upon the extent and location of the injury. Hemiplegia, or a monoplegia, may occur but if there has not been an actual destruction of brain tissue the degree of recovery may be most striking. Daily physical therapy treatments consisting of massage, passive movements, electricity and active exercises should be employed to advantage in these patients. Fa-

cial paralysis, peripheral in type, may be the result of an injury to that nerve in its course through the facial canal. The physiological function of this nerve may be interrupted by hemorrhage within the facial canal and under such circumstances, aided by a supporting splint for the facial muscles and physical therapy, the degree of recovery may be striking. Residual sensory symptoms from cortical damage are rarely encountered. Aphasia may occur as a part of a hemiplegia but unless the cortical damage is enormous, recovery may be expected. Mental symptoms may persist for a long period of time following a skull injury. They may consist of disorientation, loss of memory, emotional and habit changes.

Convulsions, which usually begin as focal attacks, may follow immediately upon the receipt of a skull injury or their onset may be long delayed. In the majority of cases, convulsions do not occur. It is impossible to prognosticate the occurrence of convulsions upon the location or extent of the brain injury. The basic status of the patient's nervous system probably plays a large factor in their development. In those cases of definite focal attacks which are followed by motor im-

pairment, plastic cranial operations may be of service.

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SKIN GRAFTING*

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There are many erroneous ideas relative to skin grafting. Whether these are due to the dramatic possibilities offered by newspaper publicity, to misinterpretation of results, lack of adequate observation, or just intentional lack of respect for the truth, I know not. I do know that I am constantly hearing bizarre tales and results reported that cannot be duplicated by careful, conscientious scientific effort. During the past three years I have given this subject considerable study and experimentation and what I bring you is somewhat of a summary of my observations and review of what is definitely known and proven about this subject.

Skin grafting has long been practiced,

but rather sporadically. During the last few years there has developed a definite trend to its more often and satisfactory use. Various factors have brought this about, the most important being:

1. *An economic factor*—in that it shortens the period of disability, decreases the time of hospitalization, and lessens the amount of dressings.

2. *A cosmetic factor*—in that it obviates unsightly scars; replaces objectionable birthmarks, and covers up defects caused by radical surgery.

3. *An adjunct of therapy*—in that it can be used as a corrective as well as a restorative measure in deformities, either congenital or acquired, and thereby aiding the surgeon in establishing as nearly

*Read before Surgical Section 42nd Annual Meeting, Tulsa.

as possible a complete anatomical, functional and physiological result.

For purposes of discussion, I have divided the types of skin grafts into two main divisions. These are *free* and *attached*. Under these two divisions come several types. In discussing each type I will discuss its indications, objections, means of obtaining and applying, and final results.

I. **FREE:** By this term is meant a complete separation of the skin and transplantation to another area.

(1.) *Small Full Thickness:* This type is known under various names such as Pinch, Pistol Shot, Cootie, etc. They are all variations of the type originated and used by Reverdin. They are usually from 1/24 to 1/8 of an inch in diameter and consist of the full thickness of the skin. In applying them they are usually placed 1/4 to 1/2 of an inch apart, upon either a fresh or clean granulating wound, being lightly set down, later pressed into the tissues and immobilized with a protective dressing. The indications for the use of this type of graft are:

(a.) To promote rapid healing of an extensive ulcerated area upon an individual who would not have much available skin for grafts, or in an individual whose general condition would not warrant extensive surgery. Likewise, it may be used to stimulate epithelialization, since it has been well proven that after the use of this type of graft that the edges of the wound start growing epithelium.

(b.) Since it lends itself nicely to a local anesthetic, may be used in individuals where a general or regional anesthetic would be contraindicated.

(c.) To hasten healing of an ulcerated area, thereby preventing a large amount of cicatricial tissue, with the idea in mind of subsequent removal and replacement with another type of graft.

The objections are:

(a.) Does not give a smooth scar at the site of the graft and it causes a scar in the area from which it is taken.

(b.) Requires extreme patience and time to perform.

(c.) Carries some risk of infection of sound tissue by multiple transfer of instruments back and forth from open ulcer.

This type of graft gives a good functional skin.

(2.) *Full Thickness (Wolfe-Krause):* Differs in nature from the above only in size. It is obtained from parts of the body that have movable excess of skin, by carefully dissecting the full thickness of the skin from the subcutaneous structures. It demands very careful technique, strict asepsis, and an absolutely dry field.

Indications for its use are: Sterile clean granulating surfaces or fresh wounds in which there is a necessity for a bearing surface, or in which no contracture is desired, such as the popliteal space, palm of hand, sole of foot, etc. Likewise, it is used in similar areas that do not lend themselves to grafting with pedicled grafts.

Objections are: It can be used only upon aseptic areas, requires a long time and very careful technique to apply. The area from which it is taken can not be used again as well as causing a scar in this area—must be in an area that can be immobilized and have pressure applied to graft.

Gives a good anatomical, functional and most often physiological result.

(3.) *Ollier-Thiersch:* This type having been originated by both Ollier and Thiersch, carries their names. It is cut at the level of the papillary layer of the corium. These grafts have given good results, but have gradually been replaced by a modification as worked out by V. P. Blair, which he terms a thick split graft. The difference is one of thickness of the graft; the split graft including parts of the papillae and connective tissue of the corium. This type of graft may be cut in large sizes, five to six inches in width and eight to ten inches in length. They lend themselves to stretching and shaping. give good smooth cosmetic results and with ordinary care their take is almost certain. They cause very little damage to the area from which they are cut, usually healing in ten to fourteen days and permitting second crop of grafts to be taken from the same area.

They are indicated in covering large areas, rapidly and with a minimum amount of scar, in forming a lining for an antrum, or a flap, or covering for an orbicularis oris or palpebrarum.

They do not give protection to a weight-bearing surface. They are also subject

to contraction, but if this factor is anticipated and allowances made for secondary grafting, this is not a real objection.

They are placed upon ulcer and sutured under tension with interrupted horse hair sutures, thus favoring more complete coaptation of graft and granulating surface. After they have been placed and sutured, small openings are cut in the grafts and all blood and serum pressed out. They are then pressed down firmly with two thicknesses of xeroform gauze, this reinforced with three layers of plain gauze and the whole splinted and maintained in position by marine or rubber sponges bound firmly to part with muslin bandages. They may be further immobilized by splinting if deemed necessary. The dressings are not disturbed for three days, then they are inspected if the grafts show any signs of maceration or any pus is visible; the dressings are carefully removed, area cleaned and dressed as before. If there are no signs of discharge, the dressings are not disturbed for seven days, when the dressings are removed and area cleaned.

(4.) *Buried Grafts*: By this type is meant either full thickness or split grafts which are buried beneath the surface. There are several varieties, the "tunnel," where strips of skin are buried and later the overlying tissue is cut through, thus exposing the skin growing beneath; the "buried pinch," accomplished by stabbing small pieces of full thickness skin into granulations; both of these are useful in dealing with dense cicatricial tissue and strictures. Last, the Esser inlay or stent graft, which is an Ollier-Thiersch graft sutured skin side inside next to a wax mold, this in turn buried in the soft tissues and allowed to remain three to five days when the sutures are removed, the wax drops out leaving the skin firmly pressed down and growing. This type is especially useful about the eyelids, nose, lips and chin.

Free grafts have the following advantages:

1. Can be completed in one operation.
2. No period of immobilization of part of body by being attached to another part.
3. They heal rapidly.
4. Large per cent replace donor area by normal skin.

II. ATTACHED OR PEDUNCULATED GRAFTS are masses of skin and subcutane-

ous fat which have been separated from all surrounding skin except a selected portion called the pedicle, through which they receive their blood supply.

This type of graft is indicated:

- (1.) To cover exposed tendons, nerves, joint capsules or bones.
- (2.) To close in defects requiring adipose tissue for contour restoration.
- (3.) In areas which normally receive weight bearing and considerable motion.
- (4.) In areas that cannot be sufficiently immobilized to receive free grafts.
- (5.) To construct new structures, as nose, a biliary fistula, esophagus, urethra, etc.

They are for the most part prepared in steps under local anesthetic, and have a wide variation of appearance as manifested in the simple tongue graft, pocket graft, slit graft, and tube graft.

The objections to their use are:

1. Requires long period of time to accomplish; and
2. Many operations.
3. A period of immobilization of parts of the body.
4. Leave a defect in area from which they are taken.

Pedunculated flaps require study in planning, not only in regard to use of tissue, but also consideration must be given direction and establishment of blood supply. On the whole they require more experience and study in their use than the free grafts.

Throughout this entire discussion I have purposely only discussed autografts, as they are the only ones that are really useful. During the past few years considerable work by Neuhoff, Loeb and Padgett has been done relative to transferring skin from one individual to another and all with the same result—it cannot be done. Time does not permit a discussion of this, but according to Loeb, there is a certain definite integral of differentiation for each individual's skin and this is different from all others.

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DISCUSSION: *George H. Kimball, M.D., Oklahoma City:*

I am glad to hear Dr. Burton mention the false conceptions about skin grafting. These ideas are not confined to the laity alone because I hear physicians frequently mention the same thing. Dr. Padgett has very clearly set forth the possibilities of grafting skin from one individual to another. He found that skin taken from one new born twin would not grow on the other twin. Nevertheless, these stories indicate to me that there is a widespread interest in plastic surgery. Recent developments in the transplanting of glands lead us to hope that in the future we may be able to use skin from the patient's relatives or friends. At the present time the only practical method is to use skin from the patient himself.

Dr. Burton has given a very comprehensive outline of the various kinds of skin graft together with their special indications. The thing we try to do in grafting skin is to replace as nearly as possible the defects that are presented in various types of cases. In my experience, the graft that can be used most frequently is the split graft. This type of procedure can be used to make up a skin defect on most any part of the body. It must be remembered that the graft can be made very thin or it can be cut quite thick. Thin grafts shrink much more than thick ones. Also, if it is used upon an exposed part of the body one must remember that the color of the graft cannot be controlled. This graft is fairly easy to prepare and the healing period is rather short. It is especially useful in reconstructing contractures about the eyes and mouth, axilla, elbows, knees or hips. Also it is quite practical in covering a large raw surface following the release of a contracture or after the excision of an old scar.

Another very useful field for this type of graft is its employment in covering large granulating surfaces following burns. A patient who has sustained an extensive burn of his back or legs or arms can be treated by tannic acid, have the crusts removed in a week or ten days. Then the granulating surface is cleansed by wet dressings and the area grafted. Ten to twelve days following the operation these cases often leave the hospital entirely free from all dressings and entirely healed. This makes the hospital time not to exceed four or five weeks in some cases, whereas treated by other methods these cases were hospitalized for five or six months. They used to have infections, pain and major disfigurements. Now the hospital time is short, pain is minimized and disfigurement lessened. I think that cases treated in this way represent one of the greatest advances in surgery today.

Now I have spoken principally about the split graft, but it has its limitations. For instance, the split grafts all shrink and have little mobility. Therefore, when we need a thick, well padded graft we must use a pedicle graft. These are especially indicated where there has been a loss of tissue from the palms or the backs of the hands or the soles of the feet where weight bearing is essential. Also where

there is a loss of part or all of a nose or part of a lip.

A full thickness free transplant to make up a defect in the face assures a much better anatomical result as well as retaining its normal color. These procedures take much more time, yet the results are certainly worth while.

As I mentioned before, there is a definite increase in the interest in plastic surgery in this country today. This branch of surgery is being more popularized the last few years.

It has been a pleasure to hear Dr. Burton's paper and I consider it a privilege to be asked to discuss this subject.

TRANSURETHRAL SURGERY *of the* PROSTATIC GLAND*

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SHAWNEE

We cannot fail to be mindful of many of the changes which are daily occurring about us. Economically and morally, socially, politically, and as individuals, many practices and customs are being altered. Someone has called our attention to the fact that it was a short while ago when the possession of gold in the bank was an honorable condition to desire and at once a man might be thrown into prison for the possession of alcoholic beverages. The reverse became true a short while ago. We do not feel pessimism, nor great optimism, but we are filled with a sense of changing values and we cannot help wondering in what manner many of these changes may effect us all, and what things may be thought true and good a few years hence.

Alterations in the methods of diagnosis and treatment have been continuously occurring since men became interested in the treatment of the sick, and stopped condemning the weaklings to physical death from neglect or actual abuse, and yet, it appears that physicians have never witnessed so many changes as within the last decade and the future seems potentially even more complex. It must be a part of each man's duty to his profession, if he recognize any obligation, to attempt to keep himself informed of the significant methods which are presented from time to time, or almost constantly, that represent departures from previous practices which have seemed good in the past. For it is probably true that the combined medical knowledge of all men falls far short of a state which could by any measure be considered complete, and we are so often

disappointed in finding that the best of treatment, which we, or any doctors may suggest, fails to relieve the patient, to save the life for a while, or, if treatment is adequate to the indications, it is often accomplished with great physical and mental distress. It occurs not infrequently, also, that relief is bought only at great cost, which many of our people are wholly unable to pay.

It is for these reasons, and for certain others, that I wish to direct your attention briefly to a certain phase of development in the surgical relief of bladder neck obstruction, with no attempt at all to make you acquainted with any technical phases of this matter of which you are unaware, but with the particular end in view that you may be led to think a little more of certain possibilities that are even now in the process of being discovered.

We feel there is reason to believe that the surgical treatment of the prostatic obstructive phenomena deserves the study of doctors who have interest in patients who suffer from this cause, whether they actually perform the transurethral operation or not. A large number of men have been so interested, many more are now working upon the problems that are related. Certain men have proposed changes in the methods of approach, and instruments of precision have been offered. We are now in a period of development wherein several proposed alterations are being subjected to exhaustive research and trial. We believe that time alone will show us wherein certain instruments and their application are superior; it seems certain that the combined curiosity of many, seeking the best possible answers, will hasten

*Read before Surgical Section 42nd Annual Meeting, Tulsa.

the arrival at a more satisfactory solution.

It is usually true that the simple instruments, performing their function with ease, need little of discussion as to their merits. Their simplicity is apparent, their usefulness certain. In like manner it is true that when many and complicated devices are proposed for accomplishing certain purposes it frequently occurs that all of them possess one or another of many faults, and that instrument which is most simple and direct in its application is usually most satisfactory. It appears that this general statement may be applied to the specific types of instruments proposed for the accomplishment of various transurethral surgical procedures. I do not know. We may mention the reports of results with those methods employed by Doctors Braasch and Bumpus, and Dr. Caulk. The McCarthy type of resectoscope appears, to some doctors, to perform with greater precision. Its mechanism is certainly more complicated. Perhaps its merits are appreciably increased.

TYPES OF INSTRUMENTS

You are all doubtless familiar with one or more of the types of instruments used for this work, but it should be indicated, I believe, that there are two distinct principles which distinguish all varieties. The cautery punch type of instrument depends for its hemostatic qualities upon the heat generated by passing a current through a resistant blade. The blade, then, which performs the cutting operation, is simply hot, and this heat is maintained during the removal of each separate piece of the tissue. Coagulation is obtained by a simple searing of the surface. The Bumpus-Braasch and McCarthy types employ a system of needles or loops and secure the control of bleeding by the use of a high frequency current. The essentially distinguishing feature seems to be that this type of the so-called electro-coagulation is more effective in immediate control of bleeding, but this is accomplished by increasing the temperature of the tissues to a greater degree of intensity and to greater depth.

COMMON ADVANTAGES

The transurethral route apparently promises a number of things which are of interest to those who seek to relieve bladder neck obstruction. May I call your

attention to a few advantages which are claimed:

1. There is less of surgical shock from loss of blood, manipulation and other factors. In the hands of skilled men (and many are recognized) it is found that mortality rates are from 0.9 to 4.7%, whereas in the surgical removal of the entire gland such low rates are reported by a relatively very small number of operators. It may be questionable as to the direct evidence this statement bears in relation to the matter of shock, but the ultimate result of profound shock, viz: death, seems to justify the conclusion. It should in no wise be understood, however, that any important surgeon regards the operation with other than profound respect, for it is a major surgical procedure. The preparation of the patient, the care for each detail of procedure, and the post-operative routines must be observed with diligence. It is doubtless due to the recognition of this attitude that the results have been uniformly encouraging. It is altogether likely that a failure to do so would be apt to discredit quickly a superior method.

2. Period of disability and the costs are diminished. The average time of preparation is from ten to twenty days in most cases; the convalescence frequently requires no more than a very few weeks. The total hospitalization is often less than three weeks. The cost of relief by prostatectomy was formerly comparable to that of a major fracture, including bills for long periods of hospitalization and from longer periods of physical disability.

3. The assurance of a good end result seems now to be as certain as in the removal of the entire gland, except in a very few cases. Where adequate drainage and relief of back pressure is desired, the results of the removal of relatively small amounts of tissue are most gratifying. A certain number of cases, presenting very large obstructions, have been found reduced in size out of all proportions to the amount of tissue removed. It occurs to many operators that in these cases a second operation, which was thought necessary, becomes wholly unnecessary a few weeks after the first operation. The percentage of poor results compares quite favorably with those of the former removal of the whole gland procedures.

4. Comfort may be secured for patient's

suffering from advanced carcinoma of the prostate, without great hazard.

5. Diagnosis by biopsy is relatively simple.

METHODS

A few principles of treatment are common to the care of patients where any of the several types of instruments are to be used for the surgical procedure. These have many points which are identical with those of importance in the care of patients having the suprapubic (or perineal) prostatectomy.

The preparation must be attended with infinite patience so that the hazards are minimized. The risk is only reduced if this is borne in mind. A gradual decompression must be accomplished in order to protect the renal function. Massage, heat and local instillation improve the condition of the lower urinary tract in many cases. The urine should be made as clean as possible. The renal function and the nitrogen elimination should be caused to approach the normal as nearly as possible. The patient's general condition and his mental attitude should be built up as for any other major surgical procedure of an elective nature. Haste or neglect of the preliminaries are extremely apt to precipitate a slower recovery, to increase the probability of poor results, or even to kill the patient; and we should consider thoughtfully this type of work, which is relatively new in the minds of many of our people, may be brought easily into disfavor by a few early failures. I recall the most unfortunate case of a surgeon who performed the first (and only) perineal prostatectomy that was ever done in my community (so far as I now know). An injury to the sphincter ani was so severe that the most important function, which it performs normally, was forever thereafter absent. This occurred some twenty years ago, and to this day there is scarcely an older man to be found in the vicinity who does not know about, and is not prejudiced against perineal prostatectomy, for that particular reason.

The technique of the actual procedure adapts itself to the individual operator, and to the various types of instruments in use. We now prefer a certain type, which may continue to gain in favor; it may be that some other type will seem best. We favor the Caulk punch for the following reasons:

1. Simplicity of operation.
2. Direct visualization.
3. Adequate control of primary bleeding without great danger of secondary hemorrhage.
4. Relative infrequency of complications.
5. Lower mortality rate.

The fenestration permits direct vision of the field of operation. Although a recent refinement has offered endoscopic vision and constant irrigation with water, many operators still prefer the direct method. The area of selection is introduced into the slot, the field is cleaned and the circular cautery punch knife removes the piece of tissue. This maneuver is repeated until a sufficient total amount of tissue has been removed.

It appears that the simple searing of the surface which is accomplished by this method is adequate for hemostasis. In the author's series (i. e., the author of the Punch) of a few more than 1000 cases it has been necessary to do the suprapubic operation for control of bleeding in only four cases. Serious hemorrhages are infrequent and are usually controlled by the pressure of mineral oil in the bladder or by aspiration of clots as with the Bigelow instrument. The secondary hemorrhages which occur incident to the sloughing of necrotic tissues appear to be much less frequent than when the deeper electro-coagulation method is used. The searing of the surfaces usually controls primary bleeding and there is a definitely diminished probability of sloughing en masse. The deeper coagulating devices, on the other hand, permit a more nearly bloodless operation, but appear to be associated more often with the threat of a severe secondary hemorrhage. More extensive areas for absorption are probably opened up by the sloughing of larger necrotic areas, and hence the implication, at least, of more frequent sepsis.

If you care for statistics in this connection, a recent report (S. G. and O., Feb. 15, 1934, page 352) of analysis shows the following: In 7,415 punch operations, 22% of the operators mentioned urinary sepsis, and this complication produced death in twenty cases. In 8,073 resection operations, urinary sepsis was mentioned by 55% of the operators, and the complication was listed as a cause of death in

91 cases, approximately four times as many as with punch method.

In the same series studied there occurred 81 deaths following the punch operation and 302 following the method of resection, or 1.09% and 3.74%. It seems particularly significant that embolus occurred almost ten times as frequently following electrical resection and uremia was more than five times as frequent. Emboli, we believe, find a greater incidence because of the specific method. It is likely that the prevalence of uremia, on the other hand, indicates a relative carelessness in the preoperative treatment, and should serve as a warning to all men who perform any type of transurethral operation. It can scarcely be emphasized too much (repeating again) that the transurethral route to the relief of bladder neck obstruction does not in any manner constitute a minor operation. And it is quite probable that any surgeon who fails to give these cases the same adequate, careful preparation as for a supra-pubic removal, for example, is extremely apt to suffer the embarrassment of an increased number of complications and of deaths.

The claims of advantage which are made in favor of the cautery punch seem well justified, and the continued use of this method by a large number of surgeons will tend to further establish its merit. If it is discarded or modified we will have reason to believe that the present models are inferior, as indeed, they probably are. The contention, however, remains. The question I wish you to consider is this: Is the punch now superior, or inferior, to other types of transurethral instruments in common use? We believe it is superior. Is the simple cautery surface searing mechanism superior to the deeper electro-coagulating device? These facts which appear to be well substantiated in the collection of statistics from scores of doctors who have operated upon a few thousand cases, using both the cautery punch and the frequency resection method are submitted for your consideration.

It appears that the incidence of primary severe post-operative hemorrhages following the punch operation is about one-half that of the resection, and the number of post-resection cystotomies necessary for the control of bleeding is twice the number necessary following the punch operation.

With the frequency types of resection, secondary hemorrhages developed three times as often, and the mortality is three times as great as with the punch type of operation.

Urinary sepsis developed as a post-operative complication following the high frequency resection procedure in a ratio of 2.5 to 1 and the incidence of other complications, such as urinary incontinence, fistula, prostatic abscess and bladder injuries was more than four times as frequent with the resection types of operation.

A certain number of expert cystoscopists have reported that the mortality was as high as 25% in their first 100 cases by resection method, a rate which can scarcely justify any sort of procedure for the relief of vesicle neck obstruction, despite the fact that their later mortality rates dropped to about 5%.

SUMMARY

1. Attention is called to the use of relatively new instruments of precision in the relief of obstructive phenomena at the bladder neck.
2. Results of various operators are considered in regard to the types of instruments and methods used.
3. An appeal is made to those who encounter these cases for a continuance of extreme care in the preparation of patients for transurethral surgery; and
4. For a serious discussion and evaluation of the relative merits of the various types of instruments and procedures.

Dr. Fred H. Clark: I am particularly interested in this subject. I am an exponent of the resection method. The punch method has many things that commend it and I am therefore strongly in favor because of the principle of the intraurethral resection done with the improved resectoscope. The time in the hospital averages but little more than ten days. The inconvenience of the patient himself is so markedly less. This is such a revelation and such a new departure and so manifestly superior to the older methods that I think it is worth while for every young man to study it, and especially the young man who is specializing in urology.

President's Page

LEROY LONG, M.D.
Medical Arts Building
OKLAHOMA CITY

THE DEVELOPMENT AND IMPORTANCE OF THE STUDY OF HUMAN ANATOMY

THE TREMENDOUS importance of a knowledge of human anatomy in the work of the doctors of medicine has been realized ever since the time of Herophilus and Erasistratus of the medical school of Alexandria in the third century before the beginning of the Christian era. Even before that era Hippocrates had essayed the study of anatomy, principally in the field of osteology, and Aristotle, the principal figure in the creation of the University of Alexandria, had stimulated the study of anatomy generally by his work in zoology.

After the destruction of the Alexandrian school, Marinus and his pupil Quintus, during the ascendancy of Nero, made some contributions to the subject which seem to have stimulated Galen (Claudius Galenus) to the extent that he became an ardent student of zoology, most of his dissections being upon the bodies of monkeys. While this led to grotesque conceptions of human anatomy, it was probably the foundation upon which his lasting reputation in medicine was built.

It is distinctly significant that the revival of medicine after the Dark Ages was definitely associated with the sane development of the study of human anatomy. During the latter part of that long, weird and gloomy period Madino, in 1316, began the teaching of human anatomy at Bologna, but, notwithstanding some authors refer to him as the father of modern anatomy, it was not until the celebrated work of Andreas Vesalius (Andre Vesale, as he is known in his home land), of Brussels, that a firm basis for the study of anatomy was established. With all honor to Madino and other predecessors, it is to Andreas Vesalius that we owe profoundest thanks and admiration. During the fifty years of his life (1514-1564) he, in spite of fiercest opposition and most cruel discouragements, demonstrated that a knowledge of gross anatomy was, without question, of

preeminent, fundamental and indispensable importance in the study of medicine.

Ambroise Pare (1509-1590), sometimes called the father of French surgery, and by many regarded as the father of modern surgery (not to be confused with Lord Lister who was the father of *antiseptic* surgery), was a contemporary of Vesalius. It does not require a long stretch of imagination to believe that Pare had the advantages of the teachings of Vesalius, especially since they not only flourished during the same period but spoke the same language and lived near each other, one of them in Paris, the other in Brussels.

In 1628 Wm. Harvey published his immortal work on the circulation of the blood, "Exercitatio Anatomica de Motu Cordis et Sanguinis," and, in that connection, it is interesting to know that for a long time before that time Harvey had been teaching anatomy and surgery at the College of Physicians in London.

There is no more striking example of the value of anatomy to the medical man than the professional life and work of John Hunter (1728-1793), the celebrated English anatomist and surgeon. He had had very meager premedical educational advantages—so meager that Sir Clifford Allbutt in "Notes on the Composition of Scientific Papers," published a few years ago, refers to Hunter as "an illiterate genius clutching inarticulately at the evasive shadows of truth"—and yet the professional influence of the erudite Allbutt has not gone very far from Cambridge, while the influence of John Hunter, the profound student of gross anatomy, is felt in every land, and his teachings are inefaceably stamped upon the records of medical progress all over the world. Despite early educational handicaps, his passionate determination to know about the gross structure of the human body makes it possible and appropriate for writers of this

day nearly 150 years after his death, to designate John Hunter as the great anatomist who "placed English surgery on a scientific basis" and who "was the most original and stimulating teacher of surgery of his time."

The development and knowledge of gross anatomy naturally and necessarily preceded the development and knowledge of microscopic anatomy. When Gaspar Friedrich Wolff (1735-1794) advanced and supported the doctrine that organized beings originate by the differentiation of simple cells he was learned already in gross anatomy.

Marie Francois Xavier Bichat (1771-1802), the founder of the study of normal and pathological histology, after studying at Nantes, at Lyons, at Montpellier, began his meteoric career at Paris by giving private lessons in gross anatomy and surgery. A few years ago I found, in a book shop at Toulouse, a complete set of four volumes of his "Anatomie Generale" (General Anatomy), and it is now in my library. In perusing its pages any thoughtful student will see at once the substantial groundwork of this most remarkable young man whose prodigious labors before his death at 31 gave such a vast amount of useful information to the medical profession.

As will have been seen by this time, my purpose is to emphasize the preeminent importance of a knowledge of gross anatomy. Microscopic anatomy—histology, embryology, morphology, et cetera—is obviously of tremendous importance, but the subjects which it embraces are but the branches and twigs and leaves of the anatomic tree. If one is interested in leaves, only, let him study leaves, only, but with the distinct understanding that it is an academic proceeding that is of but very partial value in preparation for the practice of medicine. Likewise, he may study twigs if he is interested only in twigs; or branches, forsooth, but with the same limitations.

Microscopic anatomy is simply a continuation of gross anatomy, and it ought to be taught in connection with gross anatomy. The microscope simply amplifies vision, and, in anatomy, amplified vision is of service only when it is preceded by a knowledge of the parts of the human body that can be studied without amplified vision.

—LeRoy Long.

HORACE REED, M.D.

304 Osler Building
1200 North Walker Avenue
OKLAHOMA CITY

Dr. L. S. Willour,
Ainsworth Building,
McAlester, Oklahoma.

Dear Doctor Willour:

Through the columns of the Journal, it seems desirable to reach the doctors over the state in order that we may get their cooperation which will be necessary if the Legislative Committee is to accomplish all that is expected of it. The efforts of the State Committee thus far has resulted in nothing tangible. The Committee, however, is decidedly of the opinion that it will require team work if we are able to get results. In other words, the doctors in each county or district organization must give their active support.

The developments thus far strongly indicate that candidates for the Legislature are going to do what the doctors at their home want them to do. In certain instances they have decidedly expressed their thought. Therefore, it seems necessary, and urgently so, that each county have a Legislative Committee that will function with vigor. The time for these Committees to function will be from the date of the election to the date of the meeting of the Legislature in January. If such a plan is carried out, we believe that we can carry out the mandate which was given us by the House of Delegates at Tulsa.

The State Committee promises to do the best it can to do what is expected of it, and, if it fails, it will probably be the result of the lack of cooperation from the County Committees. Each County Committee should familiarize itself with the program which we have before us, and inform their members of the Legislature before they come to Oklahoma City of their wishes. It is also desirable that the State Committee have a list of the Legislative Committees of each county and district so that in case of necessity we could communicate with them promptly.

Since the medical profession want nothing but what is in the interest of the public as a whole, it should be easy to obtain it if only we go about it in an orderly manner. I hope that you will be able to get this idea over to the profession all over the state to the end that we may be able to march through to an easy victory in the coming Legislature.

Cordially yours,
HORACE REED, Chairman.

ENDOCRINE DWARFISM

William Engelbach and Robert L. Schaefer, Detroit (Journal A. M. A., Aug. 18, 1934), believe that the problem of diagnosis and treatment of statural undergrowth, or dwarfism, rightfully belongs to the general practitioner and pediatrician. One has but to study the normal growth increment curve in the human being for this proof. It testifies to the fact that approximately 50 per cent of the total growth has been attained at the age of three years. Its increasing plateau diminishes rapidly as adolescence or sex maturity is attained. It logically follows that diagnosis and adequate treatment during the infantile and early juvenile periods should give greater therapeutic results. The work of Smith indicates that thyroid extract is a valuable adjunct in this form of treatment. The cases giving the most favorable response display a delay in roentgenographic study of osseous development.

THE JOURNAL

OF THE

Oklahoma State Medical Association

Issued Monthly at McAlester, Oklahoma, under direction of the Council

VOL. XXVII OCTOBER, 1934. No. 10

DR. L. S. WILLOUR.....Editor-in-Chief
McAlester, Oklahoma.

DR. P. P. NESBITT.....Associate Editor
Medical Arts Building, Tulsa, Okla.

Entered at the Post Office at Muskogee, Oklahoma, as second-class mail matter July 28, 1912.

This is the official Journal of the Oklahoma State Medical Association. All communications should be addressed to The Journal of the Oklahoma State Medical Association, 203 Ainsworth Building, McAlester, Oklahoma. \$4.00 per year; 40c per copy.

The editorial department is not responsible for the opinions expressed in the original articles of contributors.

Reprints of original articles will be supplied at actual cost provided requests for them is attached to manuscripts or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, 203 Ainsworth Building, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application.

It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

PRINTED BY HOFFMAN-SPEED PRINTING CO., MUSKOGEE

EDITORIAL

We are pleased to note that the abstracting department of our journal is a jump ahead of some of the journals, as in the September issue of the Annals of Otology, Rhinology and Laryngology we find abstracts of articles that were abstracted in this journal months ago. More credit to our active abstractors.

MEDICAL CARE

Many plans are being evolved by virtue of which it is proposed to give to the persons of moderate income satisfactory medical service. State medicine is being advocated by some groups; various insurance plans have been recommended; none

of these, apparently, under complete supervision of the organized profession.

Complete medical service, without the insurance principal, is being given to people of moderate income in Detroit through a plan developed and put into operation by the Wayne County Medical Society. A demonstration set-up is bringing medical service to employed persons of moderate means, people who do not want paternalism or charity, but merely credit. This plan offers complete medical service of physicians, hospitals, dentists, nurses and pharmacists, at a fee that can be paid by easy, time payments.

The plan of the Wayne County Medical Society is to assure employed people of moderate income that they can get the physician of their choice and secure medical service when they need it. Furthermore, the bureau works out a plan whereby the account can be paid from week to week.

Those people who for financial reasons are neglecting their health are encouraged to get in touch with the bureau. Because they have no cash reserve is no reason that medical service must come to them through the agency of free dispensaries and tax-supported hospitals and clinics.

Realizing that healthy workers are more efficient and desirable, industrial concerns cooperate (1) by telling employees to see their family doctors; (2) verifying employment wages and giving credit information to the bureau on request; (3) assisting in the collection of a fair fee, based on the employee's ability to pay.

The essential features of the medical service plan may be briefly summarized as follows:

1. The Wawne County Medical Society headquarters become a coordinating center (with a social service set-up) for those cases which require assistance and paying for complete medical service, including hospitalization and medical, dental, nursing and pharmaceutic service.

2. The members of the profession become the active staff caring for patients. All forms of medical care, consultation, x-ray and laboratory procedures are to be performed in the office or laboratory of the physician or at the hospital where he takes his patients.

3. This plan includes hospitalization—

all the major hospitals of Detroit are co-operating, except one.

4. Arrangements have been and are being made with the industrial concerns to make this service known to their employees. The factories and shops are cooperating in giving information and in the collection of accounts. To date the plan has received an enthusiastic welcome by each employer approached.

5. All cases in which the benefits of the coordinating plan are desired will be registered at the Wayne County Medical Society headquarters and referred to the family doctor, if the patient has one. If the patient has no physician, he is asked to select one. The patient will be given an identification card to be presented by him to the physician selected.

6. If several physicians and a hospital cooperate in the care of a case, the bills for fees will be combined into one bill and terms will be arranged according to the patient's ability to pay. The physicians and the hospital set the fees—not the bureau. Payments received by the central bureau will be distributed to each cooperating physician, hospital, dentist or nurse.

7. This plan preserves the recognized patient-physician relationship. It does not affect compensation cases. The patient always has a free choice of physician or dentist and the physician has free choice of hospitals, specialists and laboratories, exactly as carried on in private practice.

8. The most important feature of this plan is that it places complete medical and hospital services within the reach of every worthy patient and provides an easy payment plan for the settlement of bills.

9. The plan should increase the health and happiness of Detroit and Wayne County citizens, as it provides a method whereby people can procure needed medical services. It should remove a large proportion of the financial reasons for delaying medical service. The consolidation of medical and hospital bills, with the arrangement of definite terms at the time the service is rendered, should result, with the cooperation of the employer and all concerned, in an increased ratio of collections.

10. Physicians send their bills computed at their usual fees for these patients to bureau headquarters, giving certain details of their charges. The physician does not make collection of these charges—the

central bureau makes arrangements for collections and has the cooperation of the employer. To defray the cost of operating the bureau, 10 per cent of sums actually collected is retained by the bureau.

The bureau is under the direct financial and executive control of the board of trustees of the Wayne County Medical Society. An advisory committee, called the Board of Arbitration, aids the board of trustees with recommendations regarding details of operation, handles disputes, and assists the smooth performance of the bureau. Representatives of the various cooperating professional groups are seated on the Board of Arbitration. The bureau is under the coordinating supervision of the executive secretary of the Wayne County Medical Society.

The Wayne County Medical Society Bureau has grown so rapidly that statistics are obsolete almost before they can be published. The plan has received a hearty welcome from every industrialist to whom it has been explained. The total number of employees of the industries now cooperating with the bureau is approximately 229,980. Industrial concerns have various methods of cooperating with the central bureau (such as by payroll deductions and employee loans), but they all agree on one point: they are willing to extend every courtesy to the medical organizations if they can cooperate with one center, but it is impossible for them to deal with over 7,000 individual units who serve the public. Their reason is obvious. One central bureau in the medical society would entail only one deduction from payrolls per month to cover the medical welfare of their employees; the bookkeeping is thus greatly simplified. If, however, the industrial concern attempted similar cooperation with thousands of individual physicians, dentists, and hospital, it would require a tremendous amount of detailed and expensive bookkeeping. Centralized bookkeeping and collections are vital in obtaining the cooperation of large employers of labor. They hesitate to promise cooperation except with one center.

The foregoing is largely abstracted from a report in the Journal of The American Medical Association and is given to the medical profession of Oklahoma for their consideration. It may be that in some of the larger centers this would be a practical solution of a very vexing prob-

lem. Of course, like all other plans, it does not meet every contingency, but it may be a basis upon which can be constructed a more or less satisfactory solution of the problem.

WHAT AILS NURSING?

It would appear that some recognition should be given to the final report of the committee on the grading of Nursing Schools, whose membership was composed of representatives of the leading medical, public health, and nursing organizations. This report might be fittingly called "What Ails Nursing?" for it is devoted to an analysis of the educational, professional, vocational, and economic problems which today beset the nursing profession.

The basic answer to this query is tersely summarized by the report of the committee in two words, "undereducation" and "overproduction."

The committee's report appropriately ends with a terse summary of four points, to the effect:

1. "Nursing, in its various aspects of bedside care, health education, and institutional service offers one of the most attractive and congenial fields open to women and fills one of the most urgent needs of the modern social order.

2. "It calls for women of fine natural capacity, sound basic education, and high professional training.

3. "The present system of nursing education is, in general, not attracting as many women of adequate capacity and basic training as would be desirable and is not giving them the quality of training which fits them for the demands of their professional career. On the other hand it is producing far too large a number of nurses of a type unsuited to those demands.

4. "The fundamental cure of these twin evils can be effected only by the development of nursing schools which are directed with a primary educational aim and animated by professional ideals. They must cooperate with hospitals but they must have their own management and their own budgets if they are to function as educational institutions and to meet the social needs of the community."

The final words of the report constitute a declaration and an appeal:

"The committee believes that fundamental improvement in nursing education

is a vital essential for the health of the American people and presents perhaps the most important opportunity in the whole field of American education. We are confident that the evidence of the need for reform is unassailable and that the general lines of progress have been adequately outlined. We appeal to the nurses, the physicians, the hospital authorities, the colleges and universities, and the public to meet the challenge here presented."

REPORT OF ANNUAL SECRETARIES' CONFERENCE

It was the pleasure of your Secretary-Editor to attend the Annual Conference of Secretaries, held in Chicago, September 21 and 22. The attendance was particularly good and the program quite interesting.

The general theme of the Friday morning sessions seemed to be the attitude that organized medicine must take in order to prevent the socialization of the practice. Mr. LeRoy A. Wilkes, Executive Secretary of the New Jersey Association, read the principal paper on this subject, however, giving little or no concrete information, except to advise that all schemes directed toward this subject must be kept in the hands of organized medicine and to beware of lay leadership.

Dr. Oliver J. Fay, Chairman of the Board of Trustees of the Iowa State Medical Association, discussed The Centralization of State Medical Activities, and the organization as outlined in Iowa coincides very closely with the one perfected in our own state with the exception of the appointment of a board of trustees, consisting of three members that may represent the Council and who are given practically the same authority as the Council in our organization.

Our neighbor, Dr. Holman Taylor, Secretary of the Texas State Medical Association, gave in detail the setup necessary for the care of the indigent sick under the arrangements made by the NRA. These details will be very valuable to our state society if we ever receive any Federal relief in the state for the care of the indigent sick.

Your Secretary spent a half day in the offices of the American Medical Association where he was given every consideration by the officials of that organization. In all it would appear that the trip was well worth while and that some good will result from the time spent in Chicago.

Editorial Notes—Personal and General

DR. SAM McKEEL, Ada, has returned from a months' vacation in California.

DR. J. DORROUGH, McAlester, has been appointed county health physician of Pittsburg county.

DR. and MRS. A. S. RISSER, Blackwell, have returned from points in Minnesota and Vermont.

DR. AND MRS. W. P. FITE, and family have returned from their summer home at Lake Belletaine, Minn.

DR. L. S. WILLOUR, McAlester, attended the meeting of State Secretaries held in Chicago, September 21 and 22.

DR. ELIZABETH CHAMBERLIN, Bartlesville, has returned from the east, visiting Washington, Boston and Annapolis.

DR. and MRS. McCLAIN ROGERS, Clinton, spent the month of August and September in points in South Carolina.

DR. L. A. HAHN, Guthrie, has returned from a six weeks' trip to California, and a cruise to the Hawaiian Islands.

DR. AND MRS. M. A. HOUSER, Tulsa, have returned from Rochester, and a fishing trip at Solon Springs, Wisconsin.

DR. L. M. OVERTON, former physician for the State Industrial School for Girls, Tecumseh, has opened an office in Shawnee.

DR. AND MRS. W. T. SALMON, and daughter, Duncan, have returned to their home after a vacation trip to points in the south and east.

DR. WILLIAM E. EASTLAND, Oklahoma City, has returned from a two months' special study in the New York Post-Graduate Medical School.

DR. and MRS. HORTON E. HUGHES, Shawnee, have returned from Eau Claire Lake, Wisconsin, and Gunflint Lake, Canada. They returned by way of Rochester where Dr. Hughes spent several days studying at the Mayo Clinic.

ANNUAL CONFERENCE OKLAHOMA CITY CLINICAL SOCIETY

Particular attention is called to the announcement of the Fifth Annual Conference of the Oklahoma City Clinical Society. Details as to the faculty and program will be found on page 15 of this Journal.

This post-graduate course, sponsored by the physicians of Oklahoma City, should receive the support of the medical profession of this state and after contemplation of the faculty and program I feel sure that every practitioner of Oklahoma, if possible, will attend this conference and receive the benefit of instruction from these leading authorities.

Send in your registration fee early to the Secretary, 1010 Medical Arts Building, Oklahoma City.

SOUTHERN MEDICAL ASSOCIATION MEETING

This organization will hold its annual meeting in

the beautiful city of San Antonio, November 13th to 16th, under the presidency of our neighbor, Dr. Hugh Leslie Moore, of Dallas, Texas.

You will find an official announcement of this meeting on page 11 of this number of your Journal which will certainly interest you.

Not often are we fortunate in having this meeting so near home where we have the advantage of excellent railroad facilities, as well as the best sort of roads for automobile travel.

The Southern Medical Association can expect a large delegation of Oklahoma doctors to participate in this annual session.

ANNOUNCEMENT

The Radiological Society of North America will hold its next annual meeting at the Hotel Peabody, Memphis, Tennessee, December 3-7, 1934. The medical profession is cordially invited to attend. Further information may be obtained by addressing the Secretary-Treasurer, Dr. Donald S. Childs, 607 Medical Arts Building, Syracuse, New York.

AN INVITATION

The Woman's Auxiliary to the Southern Medical Association will meet in San Antonio, Texas, November 13th to 16th.

Headquarters for the women will be in the St. Anthony Hotel, where all meetings, luncheons, and dinners will be held.

It is earnestly desired that our women of the South will make every effort to attend this meeting "en masse". Your presence will not only help the meeting but will be a great inspiration to you yourselves. San Antonio is delightful and everything possible is being done to make your visit enjoyable.

A cordial and pressing invitation is extended to everyone to attend the Auxiliary luncheon on Wednesday, November 14th, to meet Mrs. Robert Tomlinson, National Auxiliary President, and other distinguished guests.

Most cordially yours,

MRS. Southgate Leigh,
President.

DOCTOR EUGENE L. EVINS

Dr. E. L. Evins, pioneer physician of Wilburton, died August 31st at St. Mary's Infirmary, McAlester, after a two weeks' illness.

Dr. Evins was born in Eddyville, Kentucky, in 1866; moved to Dardenelle, Arkansas, in 1868, where he received his preliminary education. He graduated from Kentucky Military Institute, Frankfort, Kentucky. In 1892 Dr. Evins graduated from Tulane University, moving back to Dardenelle, where he began the practice of medicine. In 1903 he located at Wilburton where he continued the practice of medicine until the time of his death.

He was a member of the Latimer County Medical Society, State Medical Association and the American Medical Association; also a Sigma Alpha Epsilon.

Dr. Evins is survived by his wife and five children, three brothers and two sisters.

DOCTOR WILLIAM J. WALLACE

Dr. William J. Wallace, pioneer Oklahoma physician, died Wednesday, September 18, 1934, at his home in Oklahoma City. Dr. Wallace had been in failing health for the past year and during the past few months has not been able to attend to any of his professional duties.

He graduated from the medical department of the University of the South at Shawnee, Tennessee, in 1901; moved to Oklahoma, locating in Chandler, forming a partnership with Dr. W. G. Bisbee, now of Bristow. In 1906 Dr. Wallace took up the specialty of urology and has been a leader in this particular line of work for more than thirty years. As a member of the Oklahoma State Medical Association he has contributed liberally, not only to the scientific work of the Association, but to all the calls of organized medicine.

The funeral was held at St. Luke's Methodist Church with burial in Memorial Park. Active bearers were Dr. W. K. West, Dr. E. S. Lain, Judge Albert Hunt, Hulbert Clark, Dr. J. M. Alford, and Early Love. Honorary bearers were Dr. LeRoy Long, Sr., Dr. Arthur W. White, Dr. Anson Clark, Hugh Johnson, Harry Wolfe, and Arthur King.

In Dr. Wallace's death the Oklahoma State Medical Association has lost a faithful worker; the medical profession a practitioner of high ideals and the urologists of the Southwest a leader in their particular branch of the profession.

THE THERAPY OF THE COOK COUNTY HOSPITAL: THERAPY OF ERYSIPELAS

Bernard Fantus, Chicago (Journal A. M. A., July 21, 1934), states that isolation from surgical patients is desirable and from obstetric patients is imperative, but quarantine otherwise is not required. The period of isolation should continue until all local lesions are healed. Disinfection of the hands and of the instruments of physicians and of nurses taking care of a patient with erysipelas is necessary. The organisms may persist in the patient for a long time in sinus or nasal discharges, which accounts for the tendency to recurrence in those who have suffered from the disease. In such carriers even the slightest traumatism, especially about the nose, should be prevented as much as possible. Ultraviolet irradiation of the area involved and of the normal adjacent skin at least two inches beyond the border should be done. The mercury quartz burner is used. The rays must be direct, so as to strike the diseased area and adjacent skin at right angles for a duration of ten minutes at a distance of 12 inches. In infants and very young children the time may be reduced to five minutes and occasionally to three minutes. If the area of erysipelas shows evidence of spreading, a second treatment will be necessary. Usually one intense treatment suffices. Roentgen rays, 100 kilovolts, unfiltered, in moderated doses (not over one-fourth erythema dose) should be applied and the application repeated not more than once on the second day, if results have not been satisfactory. A 2-inch margin of apparently uninvolved skin is included, in order to treat all infected areas. Roentgenotherapy is not advisable in the diabetic, the nephritic and young children. A barrier consisting of a narrow band of contractile collodion all round a small lesion may

be effective. The band must be applied thickly enough to produce a deep depression about two inches from the margin. Evaporating lotions, applied ice cold by means of uncovered compresses, give relief to the hot burning sensation, which may be still better ameliorated by the addition of 1 per cent phenol. The solution of aluminum acetate, diluted 1:8, is preferable for moist areas. Administration of erysipelas antiserum should be preceded by an intracutaneous test of 0.1 cc. of the serum diluted 1:10. If the test is negative within fifteen minutes, one may inject the remainder of the contents of the ampule. The dose may be repeated daily for three days. If the test is positive, it might be well to use convalescents' erysipelas serum rather than the serum derived from the animal, in amounts varying from 40 to 100 cc. Restraint is not infrequently necessary, as acute delirium may supervene. A hypnotic may be required for obstinate insomnia or stimulation for collapse.

RESPONSE OF PERITONEAL TISSUE TO DUSTS INTRODUCED AS FOREIGN BODIES

John W. Miller, R. R. Sayers, D. C., and William P. Yant, Pittsburgh (Journal A. M. A., Sept. 22, 1934), state that the tissue of the peritoneal cavity responds actively to a dust introduced as a foreign body, and this response is of such a character that it may be used as a basis for the classification of industrial dusts with reference to their pneumoconiosis producing properties. This response falls into three groups: one of absorption, one of proliferation and one of inertness. While, in these experiments, animals were kept on test for as long as 360 days, the response is sufficiently well marked in ninety days to determine the type of reaction, and often conclusions can be reached in thirty days, particularly if the reaction is one of absorption or proliferation. The reaction elicited by each dust was constant and uniform in all the animals injected with that dust. The experiments of long duration reported here confirm the results noted in a previous paper. It appears that this response of the peritoneal tissue to various dusts can be used as a test to determine the possible harmfulness of an industrial dust.

PRACTICAL COMPARISON OF SOME INSTRUMENTS USED IN ORTHOPEDIC TRAINING

George P. Guibor, Chicago (Journal A. M. A., Sept. 22, 1934), discusses the value, indications for their use and the results to be obtained with (1) instruments depending on the use of prisms to produce the superposition of images; (2) instruments depending on the reflection by mirrors to produce the superposition of images; (3) combinations of 1 and 2; (4) instruments depending on the projection of light forms on a screen to produce the superposition of images. He states that no instrument will replace personal supervision and hard work in the training of fusion, the checking of progress and the determining of suppression. All instruments have defects and limitations which are apparent only after orthoptic training has been attempted over a period of time with such equipment. As the instrument becomes more technical and mechanical it requires more personal supervision and its practical uses can be less easily varied to suit individual cases. The tendency to make use of elaborate and psychologically impressive instruments should be discouraged unless such equipment accomplishes definite results not obtainable with more simple apparatus.

ABSTRACTS «» REVIEWS «» COMMENTS AND CORRESPONDENCE

EYE, EAR, NOSE and THROAT

Edited by Marvin D. Henley, M.D.
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Diagnosis and Treatment of Tubercular Parenchymatous Keratitis. (Diagnostico Y Tratamiento De La Queratitis Parenquimatosa-Tuberculosa.) Angel Moreu and Antonio Prior. *Archivos De Oftalmologia Hispano-Americanos*, January, 1934.

In a twelve or fourteen thousand word original manuscript tubercular parenchymatous keratitis is discussed in great detail. Ocular tuberculosis, except in very rare instances, is endogenous and secondary to another tuberculous source of the body which turns the bacillus or its poisons into the circulatory current. The primary source frequently gives no clinical symptoms of any kind, so that, with the exception of ocular lesions, the patient appears completely healthy. It is not rare to observe both eyes affected at the same time by the sickness, following the law that if there are several sources of the tuberculosis they seize by preference on the same tissues.

Formerly tuberculosis was considered the main cause of keratitis. Today it is known (through the works of Hutchinson) that this is not so, since the greater number of cases is of etiological hereditary infection and those of tuberculous origin represent only ten per cent as many. The poisons, as soon as they enter into contact with the histological ingredients of the parenchyma, change them, the cells become set, the fibres swollen, are charged with fine granulations and degenerate. These degenerated elements have lost their peculiar quality: transparency. The lymphatic interlaminary canaliculos are full of an albuminous mass finely granulated which contain cells, many fibres and their products of disintegration. The corneal surface becomes blurred and irregular, like the rind of an orange. The endothelium of Decemet's membrane is scaly. Under the influence of the poison which reaches the cornea by way of the blood stream the episcleral vessels are dilated forming a circle around the cornea, a ciliary injection. Principally leucocytes pass the system of interlaminary canaliculos and slowly and progressively infuse the cornea from the outside to the center.

Iritis and cyclitis are frequently present due to the vascular relations which exist between the cornea, the iris and the ciliary body. The general diagnosis of keratitis is usually very easy, but the etiological diagnosis is beset with difficulties. The clinical diagnosis is made by means of exploration with natural light, focal light, biomicroscope, tonometer, ophthalmoscope, etc. Reactions to tuberculin, alcobayo, etc., are used from the biological standpoint. The current of the aqueous humor, according to the authors, moves before the anterior face of the iris from down upward, and by the back face of the cornea in the opposite course. This current is explained by the difference in temperature which exists between the iris (warm) and the cornea (cold). The systematic study has revealed the fact that in keratitis of tubercular origin the aqueous humor contains a greater

number of solid bodies and the current is slower than in those of syphilitic origin.

Some authorities consider tubercular parenchymatous keratitis secondarily to a similar infection of the uvea. Credit for the tuberculin as a diagnostic remedy, is given to A. J. Samogloff, of Charcow. He states that if there is no focal reaction of the uvea there is no modification of the ocular tension. The change of the ocular tone may serve normally more or less like temperature for the dosification of the tuberculin. He advises taking the tension at nine, eleven and one in the morning, and three, six and eight at night, to get a true tonometric curve. The first day the tension is maintained at normal, the second day there is a tendency to lower, the third day this tendency is accentuated even more and the following day decreases, delaying four or five days in returning to normal. The value of the intradermal skin test is also discussed along with the different preparations and dosage of tuberculin now available. These are of particular value in prodromal stage. From the clinical point of view the period of invasion and infiltration is really the first.

The functional disturbances are in proportion to the degree of infiltration. The visual disturbance, usually slight at first, may be the first thing which attracts the attention of the patient. It usually takes the cornea a few weeks and sometimes even months to be totally invaded, though there are cases in which it has happened in a few days. When infiltration has completely invaded the cornea, a period of vascularization follows. This is not to be confused with pannus, which is a superficial vascularization which may accompany several diseases of the conjunctiva. This vascularization as here described is a defense phenomena, which constitutes the start of healing. It is repeated several times in this paper that tubercular parenchymatous keratitis is in reality an inflammation of the cornea, iris and ciliary body. De Lapersonne designates these processes as an "anterior segmentitis." After the period of reabsorption many times an examination reveals evidence of chorioiditis, etc., which was undoubtedly active during the recent inflammatory process. The treatment is divided into local and general. Of primary importance is the instillation of one per cent atropine each twenty-four hours, watching the tension. Next in importance is a series of phototherapy, local and general. The principal effect of phototherapy is undoubtedly the vascularization which follows its application. The principal cause why this disease is so resistant to all treatment is in the lack of veins in the cornea which keep the medicines from working against the bacilli and their toxins with proper energy. Intramuscular injections of salts of gold (alocrisin, sanocrisin or orosanil) are given according to the detailed outline found in this article.

Lopion (a salt of gold) is the preparation used for subconjunctival and anterior injection. Slit lamp and corneal microscope reveal a precipitate the day following the injection, which disappears little by little during successive days until not the slightest trace remains. Hepatical opotherapy can be used either internally or hypodermically. It goes well as a

companion treatment with salts of gold but should not be used in cases of toxic anemia. In the periods of rest cod liver oil, iodine preparations, arsenic preparations, vitamins, etc., are given. In the period of reabsorption ionotherapy is useful as well as a pomade of yellow oxide base or tiosinamin and dionin base. If ocular hypertension appears during the treatment the atropine is suppressed and levoglucosan is used. Douches of steam and the use of smoked glasses is also recommended. The radiotherapy treatment of this disease presents the inconvenience of necessitating intimate collaboration between the oculist and the radiologist, a thing which is not always easy.

Meniere's Disease. Walter E. Dandy, M.D., Baltimore. Archives of Otolaryngology, July, 1934.

Accompanied by a voluminous chart, audiograms and illustrations forty-two cases are reported with symptoms, objective findings and treatment. The author has previously shown Meniere's disease to be permanently curable. He is now doing a hemisection of the auditory nerve, instead of a total section. This saves what, if there is any, of the residual hearing. The etiology and pathology of this disease remains idiopathic. The basic syndrome is a sudden terrific dizzy attack, accompanied by nausea and vomiting, plus deafness and tinnitus in the affected ear. The patient lives in constant horror of a recurrence. It is perhaps one-fourth or one-fifth as frequent as trigeminal neuralgia—relatively common. The disease is most prevalent between the ages of forty and sixty; it rarely begins in youth or extreme old age. The attacks are never fatal by themselves alone. This series of cases show a predilection for males, 62%; it occurred on the left side in 70% of the patients. The deafness on the affected side is progressive so that by the time the patient has decided to have something done for the relief from the more alarming symptoms there is little hearing left.

In regard to the order of occurrence of deafness, tinnitus and dizziness there is no set rule. They may occur either before or after one another or simultaneously. Tinnitus may be bilateral but is usually unilateral. It varies in resonance from the roar of a train to the highest pitch of a violin. Nausea and vomiting may be present one time and the next time in the same patient be absent. Vomiting is rare. The attacks vary in frequency and duration. At first they are as a rule infrequent, but as time goes on they increase in force and frequency. There seems to be no particular factor that precipitates these attacks—they even sometimes start while the patient is peacefully sleeping. The onset of the dizziness is as sudden as that of an epileptic seizure. No case was found that did not have impaired hearing. The audiometer curves are more or less characteristic, showing a low, flat, straight line. Of other signs and symptoms, the most common complaint was a queer sensation at, or about, the ear, and always on the same side. Headache was the next most frequent symptom. Ocular confusion such as diplopia, etc., was not uncommon.

The diagnosis is made by the appearance of the characteristic symptoms, that is, recurring dizzy attacks, partial deafness on one side and tinnitus on the side affected. In pseudo-Meniere's disease the attacks are exactly like those of Meniere's disease but there is no defect in the hearing. Cerebral arteriosclerosis and other dizzy attacks whose etiology may or may not be known have bilateral tinnitus and deafness. A cerebropontine tumor may cause dizziness, which is of short duration, when the head is turned or the posture changed. Aneurysm of the

basilar artery may cause deafness and tinnitus but rarely dizziness that in any way resembles that of an attack of Meniere's disease. Neither do acoustic tumors produce a similar dizziness. The differential diagnosis must be made on subjective symptoms. If the patient has a bilateral deafness the determining factors in choosing the site of operation are the side which has the most discomfort and tinnitus. The question is raised as to whether Meniere's disease is ever bilateral and if so why does a unilateral hemisection abolish attacks and symptoms. This brings up again the interesting question of the etiology of this disease. The operation is described quite fully and beautifully illustrated. Some of the sequelae following the operation are: Injury to the facial nerve, transient Bell's palsy, diplopia, transient nystagmus, transient vertigo and postoperative tinnitus. There are no available post mortem reports on this disease. The effect on the hearing of a partial section of the auditory nerve is to prevent a further loss. The author advises operating on the patient in the early stages of the disease.

Comment: A similar procedure was carried out and like results were obtained by H. Cairns and W. Russell Brain in a report of four cases in the Lancet, May 6, 1934.

The Interrelationship of Sinus Disease and Bronchiectasis With Special Reference to Prognosis. Dr. Louis H. Clerf, Philadelphia. The Laryngoscope, July, 1934.

Granting the interrelationship between the bronchiectasis and sinus disease it is of interest to the bronchoscopist and rhinologist to ascertain the result of the knowledge. Through original work and observance it is generally agreed that a nasal sinus infection with bilateral bronchiectasis is more frequent than the unilateral bronchiectasis with the same infection. Of the four ways of infection the lymphogenous and aspiratory routes are the most important. By using a solution of argyrol in the nose, which the patient snuffs, small spots of discoloration will be seen on the vocal cords and ventricular bands and later traces of argyrol can be found in the tracheal secretion. While it is possible for sinus infection to be secondary to bronchiectasis the infrequent occurrence does not substantiate this belief. Statistics give the relative frequency of the occurrence of bilateral bronchiectasis and nasal sinus infection from fifty-five to one hundred per cent. Some men have reported as high as one hundred per cent, while the author in a series of two hundred cases of bilateral bronchiectasis reports 82.4 per cent. Not infrequently a chronic cough is tentatively diagnosed as bronchiectasis from the x-ray findings.

It is doubtful whether or not an acute sinus infection will produce a bronchiectasis, but this, imposed upon an acute bronchial infection such as bronchitis, pneumonia, influenza, etc., is the ideal situation for the development of a bilateral bronchiectasis. From the frequent relationship between sinus disease and bronchiectasis it is evident that a nasal examination is always necessary, when there is an unexplained cough of long duration, to determine whether or not a sinus infection is present. Lower respiratory symptoms should be watched for in patients having sinus disease.

The prognosis of bilateral bronchiectasis is poor. Clearing the sinus infection affords the patient a certain amount of relief but the course of the bronchiectasis is not greatly influenced by this after it is once firmly established. The rhinologist renders his greatest service here in the prevention of bron-

chiectasis. Chronic bronchitis, although considered the most common cause of bronchiectasis is not a primary disease, so its cause must be ascertained. Some rhinologists believe that the treatment of supuration of the nasal accessory sinuses merely relieves the symptoms for the time being, which is no doubt beneficial, but their real value in the type of case under discussion is questioned.

Since the present method of caring for chronic sinus disease is apparently unsatisfactory to both the patient and the physician, it is necessary for the rhinologist to find a means to give the proper relief in cases which show a general sepsis, in those with local signs and symptoms and in cases of secondary bronchial infection and asthma. Chronic coughs which have been diagnosed as tuberculosis, have recovered completely after adequate sinus treatments. In adults a cure of definite bilateral lower lobe bronchiectasis is seldom accomplished, but if the proper sinus treatment in connection with bronchoscopy, postural drainage, intralaryngeal instillations and vaccine therapy, is given, the patient is made more comfortable. In children better results are obtained. Endless time, patience in building and maintaining the child's general resistance in the highest degree possible will produce the desired result.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D.
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Osteochondritis Dissecans Capitula Humeri. N. Aage Nielsen. *Acta Orthop. Scandinavica*, IV, 307, 1933.

This monographic article of 140 pages reviews the literature of joint mice, beginning with Pare', and then analyzes the writer's cases in detail. He has observed 133 patients with osteochondritis dissecans of the capitellum, a total of 168 elbows of which fifty-six were operated upon. Roentgenographic examination of 1000 males taken at random from the vicinity showed an incidence of this malady of four and nine-tenths per cent. From this wealth of material the writer arrives at numerous conclusions, some of which are as follows:

Osteochondritis dissecans capituli humeri is almost entirely limited to males, and is most common among those engaged in physical work. Trauma plays no definite etiological role, and there is no evidence to support the theories that endocrine disturbances, nervous disorders, or rickets are responsible. There is a striking similarity between this disease and coxa plana, Kohler's, and Kienbock's diseases. It is an aseptic bone necrosis occurring at a definite location, often bilaterally symmetrical, at a certain period in the development of the individual, almost always between the ages of thirteen and seventeen, and with a definite relation to sex and heredity. Subjective symptoms are not always present. Operative removal of free bodies is indicated when they cause pain or disability, but good results cannot be ascribed solely to the operative procedure, for symptoms may disappear with spontaneous healing. There is no justification for the theory that operation lessens the extent of the deforming arthropathy.

The First Stages of Coxa Plana. Henning Waldenstrom. *Acta Orthop. Scandinavica*, Vol. I, 1934.

After twenty-five years of writing on the subject of coxa plana, Waldenstrom contributes this study of the earliest stages of coxa plana. He divides the

development of the lesion into a pre-coxa-plana stage, the initial stage lasting six months to a year, and the succeeding stage of fragmentation, lasting two to three years. In his studies are included pathological specimens from a boy who died at fourteen years of age after suffering for eight years with coxa plana. The writer also presents numerous serial roentgenograms, some of them taken several years before the onset of the bone changes. He finds that the flexion-abduction position of Lauenstein shows the early changes much more rapidly than the anteroposterior view.

Contrary to the views of Murk Jansen and Calot, the writer finds that coxa plana develops in hip joints which previously have been normal. This is shown in a case of bilateral coxa plana where the second hip, which is normal in the first two roentgenograms, shows the typical changes after three years. The symptoms are present several months before the roentgenograms show changes. The earliest diagnostic sign is flattening of the epiphysis. This has been observed by the writer one month after the appearance of symptoms. The distance from the medial part of the epiphysis to the bottom of the socket, i. e., the lateral leg of the U-shaped figure, is also greater than normal. This distance increases with the progression of the disease. At first the shape of the acetabulum is normal. Later it changes to adapt itself to the deformed head. When the adaptation is complete the distance of the epiphysis to the bottom of the acetabulum becomes normal again.

Union of Pathological Fractures Following Metastatic Hypernephroma. Edwin L. Rypins. *Am. J. Cancer*, XX, 601, March, 1934.

The author reports a case of a patient forty-six years old with a large hypernephroma of the right kidney, treated by nephrectomy. About a year later an extensive osteolytic tumor appeared in the mid-part of the left ulna which was treated with 1000 roentgen units. The patient later sustained a pathological fracture of the tibia through another metastatic focus. No x-ray therapy was used over the tibia. Six months later roentgenographic examination showed definite healing of both the tibia and the ulna, with bony union of the pathological fractures.

In discussing the case the author states that a careful search of the literature failed to disclose any other case of metastatic hypernephroma of the skeleton which showed union following pathological fracture. Radiation therapy may have influenced healing of the fracture of the ulna, but the tibial fracture healed without such treatment.

Fractures and Dislocations of the Tarsal Bones. Philip D. Wilson, *Southern Med. J.*, XXVI, 833, 1933.

This paper is based upon a study of 4,536 cases of fractures and dislocations treated at the Massachusetts General Hospital between 1923 and 1930. In practically two per cent of the cases the tarsal bones were involved.

Severe cases of fracture of the os calcis with involvement of the subastragalar joint are best treated by subastragalar arthrodesis at the end of three weeks, unless a very accurate reduction has been obtained by manipulative methods.

The author stresses the importance of careful diagnosis, accurate reduction, and proper after-care for successful results in these important weight-bearing structures.

INTERNAL MEDICINE

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By C. E. BRADLEY, M.D.

A New Auxiliary Treatment for Impetigo Contagiosa.
Lester Hollander, M.D., and Joseph J. Hecht, M.D.,
Pittsburg. *American Journal of Diseases of Children*, Vol. 48, No. 2, August, 1934, Pages 269-271.

The contagious and auto-inoculable character of pyogenic infections of the skin causes a great deal of inconvenience, especially in school children, who are excluded from the class-room when a diagnosis of pyogenic infection is made.

The most important of the group of pyogenic infections is impetigo contagiosa, which is caused by the invasion of the upper strata of the skin by streptococci or staphylococci.

The control of the spread of the infection has been very difficult because the use of occlusive dressings or no dressing is conducive to the dissemination of the infection. We have found an occlusive antiseptic dressing, metaphen 1:500 in flexible collodion, which is very satisfactory.

After the skin around the lesion has been thoroughly washed with soap and dried, the lesion is painted with several layers of the metaphen-collodion mixture. In twenty-four hours the easily removable layers are removed with a tissue forceps. The mixture is reapplied over the adherent layers. On the third day the procedure is repeated. All the metaphen-collodion mixture with the underlying encrustation is removed on the fourth day. If the underlying skin is dry, it is anointed lightly with 2% ammoniated mercury; if it is still moist, the metaphen in collodion treatment is repeated for three days.

We have found metaphen 1:500 in collodion so satisfactory that we present it as an auxiliary treatment for impetigo contagiosa, eczema, and infectious aczemoid dermatitis.

Lymphatic Leukemia Resembling Rheumatic Fever in a Child. Report of a Case, By Lucy Porter Sutton, M.D., and Olive Bosworth, M.D., New York, New York. *The Journal of Pediatrics*, Vol. 5, No. 1, July, 1934, Pages 61-67.

The variety of symptoms associated with the onset of acute leukemia in children often makes the diagnosis obscure.

In six cases from the literature, between 1926-1933, the outstanding symptoms were rheumatoid pain or swelling; these cases bear a striking resemblance to the case presented by the authors.

The case cited from the Children's Medical Service at the Bellevue Hospital, New York City, was of a white girl, two years-eight months old. Because recurrent joint symptoms was the predominant feature of the case, the true nature of the disease was not discovered until the third admission of the child to the ward. At this time, six months after the first admission, generalized lymphadenopathy was present. The initial diagnosis of rheumatic fever, which had been doubtful because of the lack of heart symptoms, was ruled out and a diagnosis of lymphoid leukemia confirmed by a biopsy of a lymph node.

Upon admission the child's blood count was es-

entially normal: hemoglobin 82%; red blood cells 4,900,000; white blood cells 7,200; polymorphonuclears 50%. Six months later the count had dropped; hemoglobin 50%; r.b.c. 2,500,000-3,000,000; w.b.c. 14,000. The terminal count was: hb. 20%; r.b.c. 1,000,000; w.b.c. 2,100. Polymorphonuclears were decreased at all times except for a brief rise after a transfusion; small lymphocytes predominated. Platelets were normal until just before death when they were decreased. Permission for an autopsy was refused.

Five transfusions, and seven x-ray treatments were given, but the course was steadily downward.

This case shows that joint symptoms may be the prominent feature in a picture of acute leukemia in a child, and that an absence of evidence of acute carditis in the presence of polyarthritides, in a child under three years of age, suggests that it is not of rheumatic origin.

The Differential Diagnosis of Acute Poliomyelitis.
III. Clinical Studies of Poliomyelitis. John Fitch Landon, M.D., New York, New York. *Journal of Pediatrics*, Vol. 5, No. 1, July, 1934, Pages 16-28.

During the epidemic of poliomyelitis in 1931, thousands of cases were admitted to various institutions with a diagnosis of poliomyelitis and discharged with a different diagnosis. For this reason a number of conditions which might be confused with poliomyelitis will be pointed out, and the criteria employed in diagnosis analyzed with special reference to the cell count.

Diagnosis in most of these cases was presumably made on the cell count and a history of contact with a definite case of poliomyelitis.

It is well to consider the criticisms of several competent workers of the acceptance of a spinal fluid count of 10-12 cells as conclusive corroborative evidence in a suspected case of poliomyelitis. These workers have shown that pleocytosis may occur in a number of other diseases in which the onset is characterized by signs of meningeal irritation. One case of tonsillitis was found to have a spinal fluid cell count of 172. Several hundred other cases of various conditions with pleocytosis were cited.

The differential diagnosis of various conditions mistaken for poliomyelitis will now be considered under two headings: (1) Those exhibiting evidence of involvement of the central nervous system without demonstrable paralysis; and (2) those showing paralysis or pseudo-paralysis.

(1) During inter-epidemic times early differentiation between certain types of poliomyelitis and tuberculous meningitis is practically impossible. In both conditions there may be marked hyperesthesia and drowsiness, which is less profound in poliomyelitis. The onset is commonly more sudden, and vomiting, signs of meningeal irritation, and loss of reflexes earlier in poliomyelitis. In tuberculous meningitis the pulse is apt to be more irregular but slower, and the temperature lower but more protracted, than in poliomyelitis. The spinal fluid findings are the same in both conditions: clear, colorless or ground glass, web or film formation, albumen, and moderate increase in cells with mononuclears predominating. Over 1,000 cells is suggestive of poliomyelitis. The sugar content is commonly high in the encephalitic type of poliomyelitis while subnormal or low figures are found in tuberculous meningitis, especially as the disease progresses. The blood sugar is usually high in tuberculous meningitis, while the spinal fluid chlo-

rides are low, considered pathoneumonic by some workers. The final diagnosis must depend upon isolating tubular bacilli or demonstrating characteristic palsies in poliomyelitis.

Although epidemics of meningococcus meningitis usually appear in winter, and poliomyelitis in warm weather, there are occasional sporadic cases of both conditions which present considerable difficulty in early diagnosis. In meningitis the neck is much stiffer, Kernigs and Brundzinski's signs more marked, there is less hyperesthesia, and the psychic disturbances, especially delirium, more pronounced than in poliomyelitis. The most characteristic difference is the presence of herpes labialis in meningococcus meningitis, a sign rarely found in poliomyelitis. The spinal fluid of meningococcus meningitis is characteristically turbid, usually containing several thousand polymorphonuclears. Usually the intracellular diplococcus, which is gram negative, may be demonstrated.

There is usually a history of otitis media, pneumonia, or skull trauma in pneumococcus or streptococcus meningitis. Meningeal signs are more marked than in poliomyelitis and the spinal fluid is characteristically turbid or purulent—yellow in streptococcus and greenish in pneumococcus meningitis. The respective causative organisms are easily demonstrated.

Influenzal, colon bacillus, and staphylococcus meningitis must be diagnosed by the identification of the respective organisms in the spinal fluid. In syphilitic meningitis, and there is a variable increase in cells, albumen and globulin, with a positive Wassermann reaction, and typical syphilitic colloidal gold curve.

Acute rheumatic fever may be differentiated by the more protracted febrile course, absence of palsies or any alteration of reflexes, by the presence of normal spinal fluid, and finally by the favorable responses to salicylates. Rheumatic nodules may be demonstrated at times.

Rheumatic toricollis may be confused occasionally with poliomyelitis because of the painful neck.

The vomiting and abdominal pain of an early appendicitis may simulate the onset of poliomyelitis; occasionally the situation is reversed and a poliomyelitis operated for appendicitis as in a case cited by the authors.

Tetanus may be confused occasionally with early poliomyelitis, but negative spinal fluid findings, and the development of typical trisms and "risus sardonius" will serve to differentiate it.

(2) Peripheral neuritis may be differentiated from poliomyelitis by history of chronic alcoholism, lead, arsenic, mercury poisoning, or by a recent attack of diphtheria; by the more gradual development of paralysis, the benign course of the paralysis, and by negative spinal fluid findings. Wickman says: "If decreased perception of all forms of sensation really exist, or if the sense of touch be diminished and tenderness on pressure be present, the case is one of neuritis."

Traumatic conditions such as fracture, sprain, epiphysitis, etc., any infection in the bone or joint may be demonstrated by x-ray of the part. The absence of the usual invasive symptoms of meningeal irritation characteristic of poliomyelitis, and the absence of spinal fluid findings aid in differentiation.

Hysteria is often present in those who have been associated with poliomyelitis cases in times of epidemics. It may be differentiated by the fact that sensory changes are usually marked, the reflexes are

present, and there is no atrophy or fever. The patient's psychic state may be recognized as abnormal.

History, course of the disease, and spinal fluid findings will serve to differentiate facial paralysis caused by poliomyelitis from that caused by other conditions such as middle ear infection.

The fact that loss of all sensation accompanies transverse myelitis, either of traumatic or infectious origin, differentiates it from poliomyelitis.

By HUGH JETER, M.D.

The Inter-relation of Cutler, Linzenmeier & Westergren Sedimentation Tests. Esther M. Greisheimer, M.D., Ph.D.; Alan E. Treloar, Ph.D., and Mary Ryan. *The American Journal of The Medical Sciences*, February, 1934, Page 213.

The authors report the results of their investigations extending over a period of several years. The results which are somewhat technical seem to justify the conclusions as follows:

Blood sedimentation in 99 men and 102 women, selected without regard to age or health, from university students and ambulatory patients, has been studied to establish the inter-relationship between the Linzenmeier, Cutler and Westergren methods. The average sedimentation in one hour for "normal" subjects appears to be reasonably concordant for the three methods despite the wide differences in tube width, anticoagulant concentration and length of fluid column, although the differences between the means for the three methods are significant statistically. The average sedimentation at one hour for the women is approximately double that for men.

"The dispersals of individual cases about the lines of average relationship, although not studied in detail, are clearly greater than those ascribable to errors inherent in the techniques. The conclusion is clear that sedimentation measures for human blood are, in part, specific for the technique employed. Standardization of a generally acceptable method for blood sedimentation would prove most advantageous for clinical work."

Discussion: This is another step toward the standardization of a valuable test. Much confusion exists in regard to sedimentation of blood and justly so because of the many methods used and the discordance in results. The tables and charts given are interesting.

The Metastases of Carcinoma to the Spleen. Shields Warren, M.D., and A. Hobson Davis, M.D. *The American Journal of Cancer*, July, 1934, Page 517.

The author, in a study of 1140 cases of carcinoma which came to autopsy, found only 4% showing metastases to the spleen. They reviewed the results of many other autopsy reports, including 7548 autopsies by nine different authors, the results ranging from 0.3% to 4.8%. Even in advanced carcinomatosis splenic metastases is rare.

If the spleen has antineoplastic properties, in the form of ferments, hormones or phagocytes it has never been proven. The fact that there are no afferent lymphatics to the spleen probably accounts for the lack of metastases. Other theories do not seem tenable.

Fifteen per cent of 193 carcinomata of the breast gave metastases to the spleen or almost twice as frequently as to the kidneys. On the other hand, car-

cinoma of the cervix metastasized almost three times as frequently to the kidney as to the spleen. Four and six-tenths per cent of all carcinoma cases showed metastases to the kidneys and compared with four per cent to the spleen.

Discussion: It appears that these authors, through their investigations, have beautifully substantiated the following important premises:

1. That carcinoma metastases to the spleen is peculiarly infrequent.
2. That the spleen has no antineoplastic properties, but that metastases is rare because of the lack of afferent lymphatics to its pulp. The motility of the spleen may also be a factor.

Further Studies on Granulopenia With a Report of Twelve Cases. Stewart R. Roberts, F.A.C.P., and Roy R. Kracke, Atlanta, Georgia. *Annals of Internal Medicine*, August, 1934, Page 129.

These authors use the term granulopenia and designate whether complete or incomplete. Other synonyms are agranulocytosis, agranulocytic angina, agranulocythemia, hypogranulocytoses, primary granulopenia and malignant neutropenia.

Complete granulopenia is considered a rare disease and incomplete granulopenia a comparatively common state.

Complete granulopenia is discussed. The mechanism is: first, bone marrow failure; second, about four days later blood stream manifestation; third, sudden clinical onset with weakness, prostration, fever and later exhaustion and delirium; fourth, loss of immunity and protective mechanism with consequent bacterial invasion and sepsis; fifth, granulocytes or death.

It occurs at any age, but thirty to fifty years the commonest. It is common in the white race and about two females to one male. The majority of cases are from the middle or upper class. Many investigators have noted a predilection of the disease for physicians, their families, nurses, medical students and other of the medical group. The cause is unknown and various suggestions by students of the disease are as follows:

1. Specific bacterial etiology; nothing conclusive discovered.
2. Abnormal menstrual states.
3. Certain anemias, aplastic, pernicious and secondary.
4. After leucopenic diseases as influenza.
5. Certain drugs, as arsphenamine, anidopyrine and benzene ring compounds.
6. Exhaustive states, induced by toil, worry and mental effort.
7. Certain senile states in asthenic women.

Twelve interesting cases are reported.

Treatment: "We have used radiation, transfusion, liver extract, pentose nucleotide and foreign protein to no avail. We have seen no result and only disappointment from their use. We have had no experience with adenin sulphate. We see no reason why it should be used."

Discussion: Congratulations to these authors for such a timely, complete, concise and frank report.

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
LeRoy Long Clinic
714 Medical Arts Bldg., Oklahoma City.

Intestinal Obstruction. By Karl A. Meyer and Julius L. Spivack. *Annals of Surgery*, July, 1934, Page 148.

In this excellent and thorough article on this subject Dr. Meyer and his associate make the following conclusions:

1. The mortality of surgically treated cases of acute intestinal obstruction has been reduced very little in the last 25 years.
2. In his series of cases the mortality was 48.6 per cent.
3. The high mortality they think is due to late surgical interference when the triad of symptoms is present. This triad appears late when the patient is practically moribund.
4. Injection of normal salt solution, glucose, etc., cannot compensate for the damage of delay and does not influence appreciably the degree of mortality.
5. The mortality will be appreciably reduced only by early operation and this will be possible only when early diagnoses are made.
6. An early diagnosis is possible only by taking flat X-ray films routinely. This does not mean with the use of Barium or any other opaque substance. A "herring bone" appearance shows the earliest stages of obstruction, a "stepladder" appearance shows a more developed process and "fluid levels" shows the well advanced intestinal obstruction.
7. In every postoperative abdominal case in which intermittent abdominal pain arises, it is advisable immediately to take a flat X-ray film by a portable apparatus and not wait until the grave triad appears.

—LeRoy Long, Jr.

Acute Intestinal Obstruction. By Walter Moss and Elizabeth M. McFetridge. *Annals of Surgery*, July, 1934, Page 158.

The mortality of intestinal obstruction in the Charity Hospital at New Orleans has been reduced more than half within a period of ten years by the use of the proper pre-operative preparation, chiefly directed toward the correction of perverted blood chemistry, by the restriction of surgical procedures to those directed only toward the relief of obstruction, by the increasing use of spinal analgesia for all patients, by the use of the X-ray as a diagnostic measure, and by the shortening of the interval between the onset of the symptoms and admission to the hospital, an improvement which is clearly evident even though its occurrence cannot be explained.

The reduction of the mortality from 70.7 per cent in the five year period from 1923 through 1927 to 31.7 per cent in the three year period from 1930 through 1932 should be a matter of congratulation to the surgeon who treated the patients in the later series in the light of new discoveries and with a new conception of the disease. But a death-rate of 31.7 per cent is still too high for any illness in which such a mortality is not absolutely inevitable, as it is not in intestinal obstruction, and it is to be hoped that the addition of Wangenstein's decompression method, both as an independent procedure and as an adjuvant

to surgical measures, will still further reduce even this greatly improved mortality.

This article together with that of Dr. Meyers show the results that have been recently obtained in the treatment of intestinal obstruction at the Cook County Hospital in Chicago (where Dr. Meyer works) and at the Charity Hospital in New Orleans. These results are interesting and are informative in that they show results obtained in two of the larger hospitals in the middle west.

—LeRoy Long, Jr.

The Treatment of Fibroids. By W. C. Danforth. *American Journal of Obstetrics and Gynecology*, September, 1934, Page 409.

The author calls attention to the frequency of fibroid tumors, mentioning the agreed statistical estimates that after the age of 35 about twenty per cent of all women have fibroid growths in the uterus. While many of these are small and unimportant clinically, the number which require attention is sufficiently large that this type of disease constitutes an important part of the work of the gynecologist.

Dr. Danforth is discussing the result of management of these tumors in recent years at the Evanston Hospital, reporting a series of 443 consecutive cases. This series does not include, naturally, a relatively large number of cases of fibroid growths which were without symptoms and did not require treatment. It also omits patients in whom operation was primarily done for some other condition and in whom small fibroids were found.

Fibroid tumors are divided into three classes: 1. Those which need no treatment. 2. Those which may be irradiated. 3. Those which should be operated upon.

He points out the obvious fact that in the group which need no treatment, all these women should be told that examination should be repeated at intervals, because some of them who require no immediate treatment may later fall into the group where treatment is necessary because of increased size of the tumor or the onset of menorrhagia.

In the series ninety-three cases, or twenty-one per cent, were irradiated. He gives reasons why they prefer the use of radium, within the uterus, to that of x-ray. Because cases for irradiation should be chosen with painstaking care, if one is to receive satisfactory end results, and because the constant indications are so numerous and likewise so important, the author has spent considerable time discussing these contraindications to irradiation in fibroid tumor.

1. Age: The woman should be over forty and the farther past that age the better. He mentions the modern trend of reserving irradiation for the later ages, more pronounced in recent years. "It is far better that younger women should be operated upon. For them surgery is less radical than irradiation." The following table gives average ages, classified according to treatment:

All cases treated.....	42.1
Hysterectomy, adnexa preserved.....	41.6
Irradiated.....	47.3
Hysterectomy, adnexa removed.....	44.5
Myomectomy only.....	36.4

It will be observed that the irradiated group had an average age of 47 plus years.

2. Past or present inflammatory adnexal disease.
3. Size: Their custom is limitation of the use of

radium to small growths. Their rule at the present time is growths no larger than a pregnancy at two and one-half months, whereas the previous rule was one no larger than three months. Dr. Danforth points out that this is in accord with the experience of most writers, although a few have extended the use of irradiation to larger growths.

4. Ovarian Neoplasms: If there is pathology of the uterine adnexa it is wiser to abstain from irradiation.

5. Adhesions in Pelvis: This is largely upon the basis of bowel coils being held by adhesions in a fixed situation, within the effective range of radium rays, thereby receiving serious damage. This also is a consequence to be considered in all cases which have had previous operations.

6. Submucous Fibroids: Whether they protrude into the uterine canal and are partially necrotic, or whether they have been partially extruded from the internal os, they are always infected and are not favorable cases for radio therapy.

7. Pelvic Pain: Should definitely exclude the use of radium.

8. Retrodisplacement: Dr. Danforth mentions the danger of material being spilled into the peritoneal cavity and also the possibility of adhesions. (I should like to make the observation at this time that in these cases about twenty-five per cent have retroversions and even though the blood loss from menorrhagia is adequately treated by irradiation, the patient still has abnormal pelvic pathology which will give symptoms, and operation is much to be preferred in this group if for no other, this reason alone.)

9. Radiophobia: It would not seem wise to insist upon radiotherapy when the patient fears it. It is better to treat these women surgically.

Dr. Danforth points out, however, that in careful selection of cases, with due regard to the contraindications already stated, extremely satisfactory end results will be obtained.

The author then discusses the character of procedure, if operative treatment is decided upon.

In a considerable number of cases in which pedunculated tumors extrude or are about to extrude through the cervix, it is strongly emphasized that simple removal alone is all that should be done. Hysterectomy should never follow at once. Other tumors which may be present may be dealt with some weeks later. These growths are always infected. Invasion of the peritoneal cavity is gravely dangerous.

Myomectomy, allowing the uterus to remain, has a definite field of usefulness. In younger women when the maintenance of reproductivity is highly desirable and when the relationship between the tumor and the uterus is such that it is technically possible to remove the tumor and leave a uterus which is capable of pregnancy, it should be employed. However, patients should be warned of the possibility of similar growths occurring later.

Though it is sometimes possible to remove a number of tumors and leave the uterus in excellent condition, the preconceived idea of operation should not be one to extend the procedure beyond the proper limit or to risk leaving a uterus which is the seat of many deep wounds.

The author believes that myomectomy during pregnancy is, in most cases, unwise. He prefers to allow pregnancy to proceed to term with the proper pro-

cedure at that time, feeling that conservatism during pregnancy is the safest course.

The majority of cases in this series have hysterectomy performed. He believes that the ovaries should be preserved whenever possible. "The younger the patient the more essential it is to preserve ovarian function and in our very recent work we have been even more particular than we formerly were to avoid ablation of the ovaries." It will be interesting in this direction to observe the rather high age group in which ovaries were removed. This information is contained in the table given at the first of the article.

The author next considers the question of total or sub-total hysterectomy. Their series of cases shows that only four per cent had total hysterectomy. They feel that it should be chosen only in those cases in which the cervix is notably diseased or in which some fear is felt for an early coincident malignancy. The author then quotes the incidence of a number of writers of malignancy in the remaining stump. He mentions the conclusion reached at the Woman's Hospital in New York, "at least in the hands of the average operator, the increase in the operative risk which accompanies the use of complete operation is greater than the later risk of the development of carcinoma." He mentions the obvious precaution of careful study of the cervix prior to the use of sub-total hysterectomy.

It is pointed out as far as mortality is concerned that in expert hands the mortality of total and sub-total hysterectomy is about the same, but this will hardly hold true for those whose operative experience is small.

He discusses the accepted means of treating a diseased cervix when subtotal hysterectomy is done, paying particular attention to plastic repairs of the cervix and to cauterization.

In this series of 443 cases, one death occurred, or a mortality of 0.23%. This death occurred from pulmonary embolism. The avoidance of trauma, and the minimization of blood loss are of great importance. The author points out that in clinics where a considerable amount of work is done, patients who have lost a great amount of blood will be less favorable subjects for operative work, but in this group with occasional preoperative transfusion and the reduction to the minimum of trauma and blood loss at operation, the surgical management of fibroids has become very small.

Emphasizing again the importance of preservation of ovaries where possible, the author makes valuable observations as to first leaving adequate blood supply to the ovary by avoiding operative procedure in the region of the ovarian hilum, and secondly, leaving the ovary freely mobile by not attaching the divided broad and round ligaments to the stump of the cervix.

In conclusion, appreciating the surgical treatment of fibroids today in skillful hands as a safe procedure, judgment as to the necessity for treatment, and if treatment is indicated, the selection of that method best adapted to the individual case is an important part of the duty of the gynecologist.

The discussion of this very practical paper is lengthy and excellent.

Comments: This article is abstracted in considerable detail because the subject matter is of such marked practical importance and because it is a concise review of the problems which will meet the approval of the majority of able gynecologists of today.

There are certain significant features that may be mentioned. Though in this series 21% of the cases were irradiated, it will be observed that the average age of these patients was 47.3 years. With careful observance of the numerous contraindications to irradiation in fibroid tumors, and also a studied consideration of the advisability of limiting irradiation to the very late age group, it will be found that the more careful workers are using this means of treatment in an even smaller group. This minimizes in no manner the excellent end results which can be obtained in the carefully selected cases. It, however, does put the burden of management upon the proper selection of cases for irradiation rather than upon the actual technique of the management employed.

As far as myomectomy is concerned, it also is employed less frequently than a few years ago, firstly, because the mortality and morbidity from this operation is very definitely greater than hysterectomy; secondly, it has been found that it was unwise to do an extensive mutilating type of operation, leaving a uterus which could very poorly care for a pregnancy should it result. These facts and the less frequent employment of myomectomy likewise minimize in no effect the desirability of this operation in the careful selection of cases for its employment.

The preservation of as much ovarian tissue as possible at the time of hysterectomy is very well accepted in this area. However, it is noteworthy that in certain other sections of the country considerable disregard has existed for such preservation and there is a definite trend of feeling at the present time that ovaries should be preserved wherever possible, in order to maintain their function.

The literature of the past few years has been filled with the controversy, total or subtotal hysterectomy as a choice procedure. The principal reason for the choice of total as against the subtotal procedure has lain in the possibility of co-existence or future malignancy of the remaining cervix. It has always been my opinion that the choice of one or the other of these procedures is an individual problem both as far as the surgeon's experience and as far as the individual case is concerned. However, there can be little doubt that many more total hysterectomies have been done with a consequent increased mortality than were wise or justified upon the basis of possible malignancy. This in no way influences the fact that the cervix should be carefully examined and properly treated, in the event that subtotal hysterectomy is done. It will be at once appreciated that though this is an obvious precaution, it many times is entirely overlooked.

The mortality rate experienced in this series of cases is excellent, but it is about the average that exists in well regulated clinics where careful work is performed. The mortality rate for this type of surgery certainly should remain in the neighborhood of one-half per cent or less. One cannot emphasize too strongly the importance of minimization of trauma and blood loss. The danger exists that in a realization of the reasonable safety of operative treatment of fibroid tumors, many patients may possibly be subjected to operative procedure, when in reality observation in late forties may be all that will be necessary.

—Wendell Long, M.D.

Present Endocrine Diagnosis and Therapy. A Critical Analysis on Hormone Studies in the Female. By Robert T. Frank, Morris A. Goldberger and Frank Spielman, New York. The Journal of the American Medical Association, August 11, 1934, Page 393.

These authors call attention to the difficulty in maintaining one's footing in the stampede and the practical impossibility of planning connectedly during the panic of endocrine treatment. They call attention to their efforts since 1925 to place the study of functional endocrine disturbances of the female sex organs on a more solid foundation and to devise methods which will permit evaluation of conditions comparable to metabolism determinations.

The material upon which their results are based, from January, 1926, till the end of 1933, include a tremendous number of tests, and they hope that publication of the large material will help to clarify some of the confusion, loose reasoning and over-enthusiasm that threatens to further obscure a very complex subject.

They have then discussed briefly, but concisely, the following fields:

Methods Employed.

The Hormone Cycle in the Normal Fertile Menstruating Female.

Prepuberty and Puberty.

The Underfunctioning Ovaries, Sterility, Amenorrhea (Dysmenorrhea and Oligomenorrhea) and the Menopause.

Diagnosis.

Treatment.

These phases of the problem are so briefly and well discussed and the subject matter is so large that this article is not abstracted in complete form, but it is advised that it be read in its entirety in the Journal which is accessible to practically all doctors.

The summary of the article follows: "Quantitative hormone studies show the humoral status before and at puberty, during maturity and after the menopause.

Functional genital disturbances are of two types—underfunction and overfunction.

Both types are primarily due to disturbances of the anterior pituitary cycle, the ovarian cycle being secondarily affected.

Emphasis is placed on the accurate "size up" of the individual studied and on other laboratory aids which help in the recognition and evaluation of congenital and acquired endocrine stigmas.

Examples of spontaneous recovery without treat-

ment are featured, as, in our opinion, they account for the majority of successes currently ascribed to endocrine therapy in functional genital disturbances of the female.

Comments: Because of the present relative lack of complete knowledge on this subject; because of the amazing rapid valuable research in this field in recent years; because of the frequency and importance of the conditions for which endocrine preparations are recommended, and because of the widespread use of potent medication, with at best very little rational indication, an article of this type by a man in the United States who has probably had more practical experience than any other, as well as laboratory research, is extremely important for all doctors. Dr. Robert T. Frank's articles upon this subject and his views are certainly extremely valuable and likely are at least one of the best means of informing one's self about a very complex situation.

It is only natural, with his tremendous experience, that he approaches certain phases of the problem with dogmatism, which is not entirely justified. However, upon the whole, his views are not only safe and reasonable, but they are based upon actual laboratory and clinical material of a tremendous character.

It is abstracted in brief form, principally to call attention to this excellent article which appears in the Journal of the American Medical Association, available to all doctors.

—Wendell Long, M.D.

BOOKS RECEIVED

Practical Talks on Heart Disease: By George L. Carlisle, M. D., Associate Professor of Clinical Medicine, Baylor University, Dallas. Cloth, Price \$2.00. Charles C Thomas, Springfield, Ill.; Baltimore, Md.

For clearness, accuracy and simplicity of expression the above entitled monograph will appeal to anyone interested in the conditions of the heart and will be particularly acceptable to the general practitioner.

The manner in which Heart Conditions are divided or classified for study, with the first chapter given over to Fundamental Facts of Heart Examinations; the second chapter to Chronic Heart Disease; third chapter to Acute Heart Disease; fourth chapter to Heart Irregularities; fifth chapter to Heart Pain; sixth chapter to Special Types of Heart Diseases, makes these subjects appear in such a satisfactory sequence that the book reads like a story and maintains one's interest through its entire perusal.

REPORT OF EXAMINATION FOR LICENSES TO PRACTICE MEDICINE

Examination held at State Capitol, Oklahoma City, September 11th and 12th, 1934. The following applicants passed:

Name	Year of Birth	Place of Birth	School of Graduation	Year of Graduation	Home Address or Previous Location
*McMillan, Jas, Moughan	1904	Atlee, Ark.	Univ. of Okla.	1933	Norman, Okla.
Bagley, James Alfred	1878	Jefferson Co., Ala.	Univ. of Ala.	1903	Clinton, Okla.
Gilkes, Evan A. (col.)	1900	Trinidad	Meharry Med.	1933	Ardmore, Okla.
Heffernon, Geo. A.	1908	Cohres, N. Y.	Univ. of Mich.	1933	Seminole, Okla.
Maben, Charles Sylvanus	1901	Deer Creek, Okla.	Univ. of Ark.	1933	Okmulgee, Okla.
Napper, Marvin Lee	1905	Billings, Mo.	Washington Univ	1931	Tulsa, Okla.
Sinclair, Franklin Deo, Jr.	1905	Oswego, N. Y.	Johns Hopkins	1930	Tulsa, Okla.
Binkley, James Samuel	1908	Guymon, Okla.	Harvard Med.	1932	Oklahoma City
Joyce, Reid Petree	1908	Wheatland, Okla.	Univ. of Penn.	1932	Fletcher, Okla.
Stone, Samuel Newton, Jr.	1908	Calumet, Okla.	Univ. of Penn.	1932	Edmond, Okla.
Wiley, Geo. Adrian	1904	Granite, Okla.	Northwestern	1933	Norman, Okla.
John Thompson Gray	1871	Louisville, Ky.	Louisville Med.	1898	Stillwater, Okla.

*Took the examination June, 1933, but license was not issued until completion of approved internship.

MEDICAL MEN FOR THINGS MEDICAL

"The principle that medical men should be the ones to exercise control over medical service is almost axiomatic. Yet there is confusion of thought where there could be straight thinking if all the facts were brought out and faced.

"There are those who would virtually make the physician an employee of the state. They fail to recognize the utter incompatibility between the American political system and the methods of truly professional men.

"There are those who complain about the scarcity of physicians. Yet it is a fact that while England has one doctor for 1,490 persons, France one for 1,690, and Sweden one for 2,890, there is in the United States one physician for every 780 persons.

"There are those who denounce our hospitals on the score of high charges for service, but the truth is that the cost per day of a hospital room with meals and the day and night personal ministrations required by an invalid is usually less than a well person would pay for mere room and meals in a first-class hotel.

There are those who would like to let down the bars to self-medication. Yet the fact is that during the last few generations the average span of human life has been extended ten years, chiefly through the discoveries of medical science.

"Physicians know these things. They spend years acquiring an education on the care and repair of the most marvelous mechanism on earth—the human body. But they would readily admit that this education does not qualify them for telling railroad executives how to solve transportation problems or impressarios how to stage an opera. The work of the world needs many kinds of specialized knowledge, but certain it is that each field of work will be best managed by those who know it best."—From Mead Johnson & Company's announcement in Hygeia, August, 1934.

SKIN SENSITIVENESS TO TUBERCULIN IN PRIMARY TUBERCULOSIS: IS ITS DEGREE IN CHILDREN RELATED TO THE EXTENT OF DEMONSTRABLE INTRATHORACIC PATHOLOGIC CHANGES PRESENT?

Chester A. Stewart, Minneapolis (Journal A. M. A., July 21, 1934), observed that the average degree of skin sensitiveness to old tuberculin present in a group of infected children with negative or inconclusive chest films was essentially equal to that present in groups of cases with definite and conspicuous demonstrable intrathoracic lesions in different stages of resolution and considered characteristic and typical of tuberculosis of first infection. The mean level of allergy to tuberculin produced in groups of children by chance infections is independent, therefore, of the absence, presence, scarcity, abundance, size or character of the primary tuberculous lesions demonstrable by roentgen examinations during life. The distribution of different degrees of skin sensitiveness to old tuberculin in a group of infected children consisting of cases with normal or inconclusive chest films was found not to differ essentially from that present in other cases with distinct demonstrable intrathoracic lesions deemed characteristic of tuberculosis of first infection. The curves that represent the general pattern of the distribution of different degrees of allergy to tuberculin

found in each group of cases are very similar. This study on living patients failed, therefore, to disclose evidence that justifies one in entertaining suspicions that children with large and intense Mantoux reactions harbor more extensive pathologic changes or have more active primary tuberculous lesions than do other children who are less sensitive to tuberculin. Groups of children with primary tuberculosis exclusively, who are dissimilar roentgenologically, are alike as far as the average group skin sensitiveness to tuberculin is concerned. Apparently soon after tubercle bacilli make their initial entry into the body and before the primary tuberculous lesions have time to resolve, allergy reaches an average group level that is sustained with little or no definite change throughout the first few years that postdate the primary infection. Changes in the size of Mantoux tests throughout the periods of increment and decline of the reactions in children with normal or inconclusive chest films roughly parallel similar changes manifested by skin reactions in other children with definite demonstrable intrathoracic lesions typical of tuberculosis of first infection.

GASOLINE AND KEROSENE POISONING IN CHILDREN

John A. Nunn and Frank M. Martin, San Antonio, Texas (Journal A. M. A., Aug. 18, 1934), discuss the clinical and laboratory examinations in seven cases of gasoline poisoning and sixty-five cases of kerosene poisoning. The total mortality of the cases was 11 per cent. Among the kerosene poisoning cases it was 9.2 per cent, while in the gasoline cases it was 28 per cent. In the fatal cases the children lived from two to eighteen hours after the ingestion and the aspiration of these substances. All the children who died showed definite clinical evidence of pathologic changes of the lung; namely, many moist rales in both lungs, rapid, shallow respiration and cyanosis. About one-third of the patients who had swallowed a large enough quantity of the substance to become sufficiently ill to require hospitalization had also aspirated some of the fluid. The patients who aspirated, as well as ingested, one of these petroleum products presented a much graver clinical picture, owing to the rapid development of pneumonia, which was evidenced by cough and many moist rales throughout both lungs. In the fatal cases there were physical signs of pneumonitis. It is believed that the pneumonitis was produced by the irritating properties of these substances, while the marked evidence of involvement of the central nervous system is due to the rapid and overwhelming absorption of the volatile fractions by the pulmonary circulation, this absorption being facilitated by the thin permeable alveolar wall. The symptoms of gasoline and kerosene poisoning are apparently produced by the toxic action of these substances on the central nervous system, principally the respiratory center motor areas and the vagus center. There is apparently no loss of oxygen carrying capacity of the blood. The prognosis may be said to be in direct ratio to the amount of the hydrocarbon that enters the lungs, and that if the patient survives several hours he recovers completely. There are practically no complications or sequelae in this type of poisoning. The irritating effects in the lungs and the gastro-intestinal tract disappear completely in from forty-eight to seventy-two hours. Treatment consists of removing as much of the offending agent as possible by gastric lavage or emesis and laxatives. When cyanosis and other signs of respiratory embarrassment are present the use of oxygen (95 per cent) and carbon dioxide (5 per cent) has been of considerable benefit.

OFFICERS OF COUNTY SOCIETIES, 1934

COUNTY	PRESIDENT	SECRETARY
Adair.....	R. L. Sellers, Westville	E. P. Greene, Westville
Alfalfa.....	Z. J. Clark, Cherokee	L. T. Lancaster, Cherokee
Atoka-Coal.....	J. B. Clark, Coalgate	C. C. Gardner, Atoka
Beckham.....	H. K. Speed, Sayre	C. F. Jones, Erick
Blaine.....	A. K. Cox, Watonga	T. A. Hill, Watonga
Bryan.....	H. B. Fuston, Bokchito	John T. Wharton, Durant
Caddo.....	J. B. Miles, Anadarko	P. H. Anderson, Anadarko
Canadian.....	Jos. T. Phelps, El Reno	Malcom E. Phelps, El Reno
Carter.....	G. E. Johnson, Ardmore	L. C. Veazey, Ardmore
Cherokee.....		A. A. Baird, Tahlequah
Choctaw.....	L. E. Gee, Hugo	E. A. Johnson, Hugo
Cleveland.....	H. B. Kniseley, Norman	D. G. Willard, Norman
Coal (See Atoka)		
Comanche.....		E. P. Hathaway
Craig.....	C. F. Walker, Grove	F. T. Gastineau, Vinita
Creek.....	Roy M. Sweeney, Sapulpa	G. C. Croston, Sapulpa
Custer.....	T. A. Boyd, Weatherford	C. Doler, Clinton
Garfield.....	R. C. Baker, Enid	John R. Walker, Enid
Garvin.....	Ray H. Lindsey, Pauls Valley	J. R. Callaway, Pauls Valley
Grady.....	C. P. Mitchell, Chickasha	L. E. Woods, Chickasha
Grant.....	I. V. Hardy, Medford	E. E. Lawson, Medford
Greer.....	G. R. Cherry, Mangum	J. B. Hollis, Mangum
Harmon.....	James E. Jones, Hollis	Russell H. Lynch, Hollis
Haskell.....	T. B. Turner, Stigler	R. F. Terrell, Stigler
Hughes.....	Wm. L. Taylor, Holdenville	G. W. Diggs, Wetumka
Jackson.....	E. S. Crow, Olustee	E. W. Mabry, Altus
Jefferson.....	W. C. Burgess, Ringling	J. I. Hollingsworth, Waurika
Kay.....	C. E. Northcutt, Ponca City	D. M. Gordon, Ponca City
Kingfisher.....	B. I. Townsend, Hennessy	A. Dixon, Hennessy
Kiowa.....		B. H. Watkins, Hobart
Latimer.....	E. L. Evins, Wilburton	E. B. Hamilton, Wilburton
LeFlore.....	Harrell Hardy, Poteau	W. M. Duff, Braden
Lincoln.....	J. W. Sosbee, Stroud	C. W. Robertson, Chandler
Logan.....	J. Leslie LeHew, Guthrie	R. F. Ringrose, Guthrie
Marshall.....	P. F. Robinson, Madill	J. H. Veazey, Madill
Mayes.....	L. C. White, Adair	W. J. Whitaker, Pryor
McClain.....	B. W. Slover, Blanchard	R. L. Royster, Purcell
McCurtain.....	R. D. Williams, Idabel	R. H. Sherrill, Broken Bow
McIntosh.....	J. C. Marshall, Checotah	Wm. A. Tolleson, Eufaula
Murray.....		H. C. Bailey, Sulphur
Muskogee.....	Chas. E. White, Muskogee	S. D. Neely, Muskogee
Noble.....	J. W. Francis, Perry	A. M. Evans, Perry
Nowata.....	J. P. Sudderth, Nowata	H. M. Prentiss, Nowata
Okfuskee.....		C. M. Bloss, Okemah
Oklahoma.....	Walter W. Wells, Okla. City	Bert F. Keltz, Okla. City
Oklmulgee.....	J. G. Edwards, Okmulgee	M. B. Glismann, Okmulgee
Osage.....	C. K. Logan, Hominy	M. E. Rust, Pawhuska
Ottawa.....	General Pinnell, Miami	J. W. Craig, Miami
Pawnee.....		
Payne.....		L. A. Cleverdon, Cushing
Pittsburg.....	E. H. Shuller, McAlester	L. C. Kuyrkendall, McAlester
Pontotoc.....	M. L. Lewis, Ada	O. H. Miller, Ada
Pottawatomie.....	R. M. Anderson, Shawnee	H. G. Campbell, Shawnee
Pushmataha.....	H. C. Johnson, Antlers	B. M. Huckabay, Antlers
Rogers.....	W. S. Mason, Claremore	W. A. Howard, Chelsea
Seminole.....	A. B. Stephens, Seminole	Dwight B. Shaw, Seminole
Stephens.....	C. P. Chumley, Duncan	D. Long, Duncan
Texas.....	Wm. J. Risen, Hooker	R. B. Hayes, Guymon
Tillman.....		
Tulsa.....	Ned R. Smith, Tulsa	C. F. Simpson, Tulsa
Wagoner.....	S. R. Bates, Wagoner	John D. Leonard, Wagoner
Washington.....	E. E. Beechwood, Bartlesville	J. V. Athey, Bartlesville
Washita.....	C. B. Sullivan, Colony	E. K. Copeland, Cordell
Woods.....	W. E. Simon, Alva	O. E. Templin, Alva
Woodward.....	H. L. Johnson, Supply	C. W. Tedrowe, Woodward

NOTE—Corrections and additions to the above list will be cheerfully accepted

THE JOURNAL

OF THE
OKLAHOMA STATE MEDICAL ASSOCIATION

VOLUME XXVII

McALESTER, OKLAHOMA, NOVEMBER, 1934.

NUMBER 11

THE EPILEPSIES ASSOCIATED WITH ENDOCRINE DISORDERS*

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OKLAHOMA CITY

The relationship of various neurological and psychiatric disturbances to endocrine disorders has been recognized for some time. The frequent occurrence of the more severe nervous reactions, such as the epilepsies, headache, insomnia, somnolence, vertigo, tinnitus, behavior disorders, and personality traits in incretory imbalance is of sufficient importance to demand the attention of the entire medical profession. The epilepsies are of particular interest, inasmuch as in the past it has been customary to treat them with sedatives and offer the victim little hope.

During the last decade numerous case reports have been made of these convulsive states associated with definite endocrinopathies, which have responded to replacement therapy. Engelbach reported 28 cases in endocrinisms, for which no other cause could be found, all of which responded favorably to organotherapy. They were classified as follows: 13 pituitary; 4 thyroid; 4 gonad; 7 parathyroid. Others have reported them associated with adrenal dysfunction, and Harris first called our attention to the many cases associated with hyperinsulinism. Gerard and Kuntz call attention to the association of tetany and epilepsy, and Parbon and Constantinesco report the favorable effect of parathormone in its treatment. E. Geert Jorgensen reports two cases of post operative tetany and epilepsy; Brodski four cases of genuine epilepsy relieved by transplants of goat parathyroids. He states, however, that hypoparathyroidism must not be considered the only cause of the complex symptoms of epilepsy, but that the parathyroids furnish the princi-

pal cause of the endocrine upset and that the symptoms are the result of a generalized disturbance of the incretory system. I present the following case reports as rather classical examples of convulsive states associated with endocrine disorders:

PARATHYROID

Case 1: W. M., a female, aged 18 months. She had spasms since birth, and had always been extremely nervous. The mother stated that the child was a difficult feeder and that she had never been able to find a suitable diet for her. The parents had been advised by several physicians that her symptoms were due to birth injury. Examination revealed a rather spastic and definitely underweight infant. There were cataracts of both eyes. Chvostek and Trousseau signs were both present. A severe crying spell during examination provoked a typical epileptic seizure. A diagnosis of infantile tetany was made. Calcium lactate and viosterol were prescribed with complete relief of spasms, ability to take food, and disappearance of the cataracts.

Case 2: E. M., a male, aged 16 years, complained of peculiar quivering and fainting spells, nervousness, and inability to gain weight. He stated that he fainted upon the least exertion and that his muscles and bones ached following this. He ate an average amount of food, but could not gain weight. It was very difficult for him to adjust himself, either at home or at school. Examination revealed a tall, thin youth, 70½ inches in height, weighing 116 pounds (optimum weight 150 pounds), who was obviously very nervous. Positive findings were scaphoid scapulae, acrocyanosis of extremities, myodemia, very large central incisors, and all teeth in malposition and malocclusion. The serum calcium was 8.6 mgms. The serum phosphorus was 4.2 mgms. Diagnosis was hypoparathyroidism. He was given calcium by mouth, parathormone 10 units three times weekly, and a high caloric diet. Symptoms entirely disappeared, and weight increased 20 pounds in two months.

Case 3: J. M., a female, aged 7 years, who complained of epileptic seizures, extreme emotionalism, and nervousness, which had not been relieved by phenobarbital. She was nauseated most of the time, and the mother stated that she had never been able to find an agreeable diet for her. Examination revealed

*Read before the Section on Medicine, 42nd Annual meeting, Tulsa.

a definitely underweight child. All deep reflexes were increased, and Chvostek and Trousseau signs were positive. X-ray revealed a persistent thymus. Radiation of thymus and calcium gluconate by mouth resulted in complete cessation of attacks.

Case 4: S. E., a boy, aged 16 years, complained of epilepsy, headaches, asthma, general and sexual underdevelopment. In his play with other children he found it necessary to rest frequently because undue exertion precipitated the seizures. Examination revealed a poorly developed and extremely undernourished boy, 56¼ inches in height (optimum 65 inches), who weighed 63½ pounds (optimum 90 pounds). He had the somatic and sexual development of a 10-year-old child. The joints were flail-like and the muscles hypotonic. The serum calcium was 9.2 and the serum phosphorus 8.2 and 7.6. Because of the high serum phosphorus, he was given a low phosphorous diet, plus viosterol, minims 3, three times daily, and calcium gluconate, grains 30, twice daily. Anterior-pituitary growth hormone was also prescribed. He has gained 22 pounds in weight, has grown three-quarters of an inch in height, and has had complete relief of all symptoms during the past three months.

Calcium metabolism is regulated by the parathyroids. One of the prominent actions of calcium is upon the excitability of the nervous and muscular systems. This is evidenced in parathyroid tetany by marked nerve and muscular hyperirritability due to a lowered calcium balance. Its inhibitory effect on the conduction of nerve impulses is exhibited in hyperparathyroidism where the serum calcium is increased. In infantile tetany the rapid excretion of calcium may be reduced by vitamin D. In hypoparathyroid tetany the serum calcium may be increased by administration of the active principle of the gland, which is available as parathormone or parodin. In both the parathyroid and infantile types calcium by mouth is indicated.

PANCREAS

The role of the pancreas and disturbed sugar metabolism as a causative factor in epilepsy has been brilliantly demonstrated by Seale Harris and others. They have conclusively proved the definite association of convulsive states with hyperinsulinism and other hypoglycemic conditions.

Case 1: M. C., a white female, aged 9 years, who during the past two years had had attacks simulating genuine epilepsy, consisting of clonic and tonic muscle spasms, frothing at the mouth, and unconsciousness. The attacks occurred two to six times monthly, were always nocturnal, and, most usually, between 5:00 and 6:00 in the morning. One and a half grains of luminal at bedtime during the past six months had had no effect upon them. Examination revealed nothing remarkable, except a suggestive diadokokinesia. The serum calcium was 10.2 mgms. per cent, and serum phosphorous 4.3 mgms. per cent. The fasting blood sugar was 0.052 per cent. X-rays of the skull were negative. Because of the low blood sugar and time of occurrence of the attacks, increased

carbohydrate feedings were prescribed. She was given one stick of pure sugar candy at 10:00 a. m., 3:00 p. m., and at bedtime. There has been no recurrence of the seizures during the past eleven months.

Case 2: C. B., a white male, aged 14 years, with history of typical grand mal seizures occurring weekly, which had not responded to sedation. Convulsions always occurred near 5:00 o'clock in the morning. The general and neuro-endocrine examinations revealed nothing remarkable. The fasting blood sugar was 72.5 mgms. The glucose tolerance test showed an atypical curve: 0.0725; 0.0754; 0.0921; 0.0727. Six ounces of highly sweetened orange juice were ordered for him at 4:00 o'clock each morning. He has been entirely free of attacks during the past fourteen months, except on two occasions, one which occurred while suffering from a severely infected tooth, causing extreme pain until extracted. Another occurred following an attack of influenza with high fever, plus a rather severe emotional upset.

Case 3: G. S., a white male, aged 21 years. Genuine epileptic seizures at the age of 14 years, which have continued since then at the rate of three to six a month, and always nocturnal in type. Examination revealed a thin, undernourished, asthenic type individual, somewhat maladjusted and depressed. Blood pressure was 88/68. Fasting blood sugar was 62.4 mgms. per 100 cc. of blood. Sugar tolerance test readings were: 0.065; 0.090; 0.052 per cent. Frequent feedings of moderately high carbohydrate content were instituted, and, because of his low blood pressure and other vagotonic signs, suprarenal substance was added. He has had only two seizures during the past three years, precipitated by very excessive exertion.

The majority of cases of functional hypoglycemia may be treated by frequent feedings or by a diet high in fat, which has a depressing effect upon the pancreas, or with pituitrin, which is an antagonist of insulin. Hyperinsulinism due to neoplasms of the pancreas is best treated by operative procedures.

ADRENALS

Myasthenic, narcoleptic, and epileptic episodes are frequent sequellae of adrenal insufficiency. In Addison's disease fatigue, insomnia, mental aberrations, nervous irritability, and convulsive seizures commonly occur. Their immediate relief following injections of adrenal cortex extracts is striking. In other hypoadrenic conditions adrenalin, the hormone of the medulla, may be equally efficacious.

Case 1: F. M., an obese female, aged 35 years, began having epileptic seizures at the age of 18 years. The severe attacks, which occurred two to three times a month, were interspersed with almost daily occurrences of "blank spells," during which the patient would suddenly become motionless for two to five seconds. Other signs and symptoms were those of a vagotonia. Suprarenal replacement therapy has given her entire relief during the past 18 months.

Case 2: G. K., a young man, aged 26 years, complained of narcoleptic attacks, which he had been told were epileptic. The seizures would occur while waiting on a customer, during conversation, and resulted in his having had several auto accidents. They oc-

curred two to four times daily. He had been treated as an epileptic for four years with no relief, and had become very depressed and morose. Suprarenal replacement therapy has given complete relief for thirteen months.

Case 3: C. T. D., a white man, aged 59 years, who appeared to be much older, complained of mild convulsive states followed by clouding of consciousness, which would last for several hours. During the past eight years he had noticed extreme fatigue, which interfered with his duties as a minister, and inability to gain weight. His weight was 105 pounds, which he said was the most he had weighed in ten years. He had frequent indigestion, and his diet consisted mostly of cereals, eggs, and starches; no meats nor green vegetables. Examination revealed a definitely undernourished individual with some apparent bronzing of the skin. The blood pressure was 90/70. Examination was otherwise negative. He was given adrenal cortex, 1 cc. three times weekly, and advised to add meats and vegetables to his diet. Re-examination six weeks later revealed the blood pressure to be 120/78. He had gained 17 pounds in weight, and was entirely free of all symptoms. A letter received from him six months later advised that he had been "getting along so well that he could hardly believe it." There had been no recurrence of symptoms. The blood pressure continued 124/75, and he felt that he was in perfect health.

PITUITARY

Sir Victor Horsley, in 1886, demonstrated that ablation of the hypophysis produced an irritability of the cerebral cortex, so marked that even the slightest stimulation would result in typical epileptic seizures. This has been further confirmed by other investigators. Cushing described 13 cases of epilepsy associated with symptoms definitely pituitary, which responded to replacement therapy. Lowenstein observed that 30 per cent of epileptics showed evidence of pituitary symptoms, such as acromegalic characteristics, dystrophia adiposogenitalis, somatic and sexual under- or over-development, and x-ray evidence of sella turcica changes. In all cases he noted lessening of convulsions following administration of pituitary substance. Timme has reported equal success with the same treatment. Pituitrin is known to lessen the convulsions provoked by insulin.

The relationship between the pituitary and epilepsy was established when an anatomico-pathological examination in cases of epilepsy revealed changes in the pituitary. A typical case is the one reported by Kryloff. A careful post-mortem examination revealed intensive degeneration of cells in the tuber cinereum with an atrophy of the entire hypophysis. The posterior lobe was sclerotic, and the cells of the anterior lobe showed hyalinization. Similar changes have been observed by Claude and Schmingeld in 50 per cent of their

cases. In the hypophysectomized experimental animals of Hoursny and his co-workers convulsions often ensued, which disappeared after pituitary implants. These findings are in accord with the ideas of Cushing and of Clark—that pituitary hypofunction is one of the fundamental pathologic conditions of epilepsy. This idea has also been confirmed by the findings of Altenburger and Stern, who found a lessened amount of pituitrin in the cerebrospinal fluid of epileptics.

During pregnancy there is an augmentation of the secretory activity of the anterior lobe of the pituitary and an increased vasoconstrictor response to extracts of the posterior lobe. During this period there is often a complete absence of the epileptic seizure. This reaction can be, and has been, attributed to the moderating influence of the pituitary gland on the centers in the diencephalon. The fact that there is a decrease in the convulsive attacks following oophorectomy can be explained on a similar basis since there is an increased activity of the pituitary with a rise in the content of its secretions in the cerebrospinal fluid. The same condition presents itself after thyroidectomy or capsulectomy.

The rather frequent findings of physiological and morbid changes in the pituitary, thyroid, adrenals, and other incretory glands in cases of epilepsy gives us an indication of the relationship of these glands to this condition. It is an established fact that there is a very definite functional relationship, and one is readily able to suppose that convulsive crises may be lessened by a normal physiological balance and aggravated by a condition which produces an abnormal or toxic pituitary secretion. This may readily explain the numerous cases of thyroid origin and their relief by the administration of thyroid or by thyroidectomy; accompanying changes in the adrenals and relief by suprarenal substance and by denervation; and the convulsive action of insulin, which is partially counteracted by the injection of pituitrin.

Case 1: M. R., aged 28 years, complained of epileptic seizures three or four times weekly. The onset was at the age of 12 years, at which time her weight began to increase very perceptibly. She matured at the age of 16 years, and the attacks became less frequent, but more severe. At the age of 20 years the menses became lessened in amount and duration, and the frequency of the attacks increased. Her weight continued to increase, and was of girdle type. Her basal metabolic rate was minus 16. She was given antuitrin, 1 ampoule daily for six weeks and then

reduced to 1 cc. three times weekly, and thyroid in increasing doses to tolerance, which was established at 5 grains daily. Her menses returned to nearly normal, and the attacks were reduced to a mere fluttering of the eyelids and momentary haziness, which occurred only once every two or three months.

Case 2: S. D., a boy, aged 12 years, complained of convulsive states since the age of 8 years, occurring two to five times monthly. He had taken luminal, grains $1\frac{1}{2}$ daily, over a four months period without effect. Examination revealed a typical dystrophia adiposogenital syndrome. He was given anterior and posterior pituitary substitution treatment, and has been entirely relieved of the attacks for the past three years.

Case 3: C. F., a female, aged 24 years, complained of classical epileptic seizures since the onset of her menses at the age of 15 years. The attacks had always been pre-menstrual. The menses was of regular 28-day cycle, but the flow was very scant, and only of one or two days duration. Examination revealed a rather classical pituitary type individual, and relief has been obtained the past nine months during the administration of antuitrin.

Case 4: M. L., a female, aged 22 years, complained of rather severe convulsive states occurring several times daily during her menstrual period, which was rather excessive, and lasted five to seven days. She matured at the age of 12 years, and the convulsions began to occur two years later. She was married at the age of 18 years, and conceived during the next few months. During the entire term of her first pregnancy she was completely free of any seizures. Shortly after the termination of this pregnancy the seizures returned. A year later she again became pregnant, and the attacks ceased. She aborted at the end of four months, and her symptoms recurred. She was given an anterior-pituitary-like hormone (Antuitrin-S) in 1 cc. doses every other day during the second half of her menstrual cycle, and has been entirely free of the symptoms during the past eleven months.

I have attempted in this brief paper to demonstrate the importance of endocrine dyscrasias as an etiological factor in the causation of epilepsy, or preferably "the epilepsies" because they may result from a multiplicity of conditions. These convulsive states, according to White, "may be the outward manifestations of many other conditions such as functional neuroses and psychoneuroses (hysteria, compulsion neurosis), the more frank psychoses (dementia praecox), toxemic states (uremia, alcohol), many organic diseases (paresis, cerebral syphilis, abscess, softening and tumors), and the grosser defects of development (idiocy) and trauma."

That many so-called epileptics are amenable to treatment is becoming more to be appreciated by the profession. It is my contention that every sufferer from this symptom complex is entitled to, and should have, a thorough diagnostic survey, including a very careful neuro-psychiatric and endocrine examination. Many of them become morose, depressed, and

hypochondriacal because they have been wrongly impressed, by members of their family and by their physician, of the hopelessness of their affliction. We can do much for these people by convincing them that they are not doomed, urging them to act and do as their fellow-men, and attempting to lead them away from the egocentric fixation which they have acquired. Many can be relieved by endocrine therapy.

DISCUSSION—*By Dr. Harry Wilkins, Oklahoma City:*

This paper by Dr. Turner brings to our attention the old subject of the epilepsies. He has referred to the particular phase of epilepsy in which endocrine therapy is indicated as "convulsive states." I feel that this is a much better term than "epilepsy" since he is describing a disease in which convulsions are symptoms of endocrine disorder. The omission of the term epilepsy is an advantage in removing from the patient's mind the dreaded blight ordinarily cast on one by having their disease described as epilepsy.

This report of excellent results obtained by Dr. Turner in the use of various gland substances opens an avenue to greater knowledge concerning convulsive states. It also shows great advance during the past few years in the knowledge as to physiology of the endocrine system.

In recent years the studies by Dr. Penfield and his co-workers of the nerve supply of cerebral vessels has brought to light the fact that nerve fibers do exist in the vessel wall and control the caliber of the vessels somewhat as the vasoconstrictors elsewhere in the body. If the vascular supply of the cortex is under control of the nerve mechanism such as the above-mentioned experiment tends to indicate, we then have a media thru which endocrine substances may have a direct influence on the blood supply to the brain and particularly the motor cortical centers. I still hold to the theory that convulsions result from cortical irritation regardless of the nature of the irritation and the symptoms produced are similar. In other words, a Jacksonian seizure resulting from impaired blood supply may simulate in every way the Jacksonian attack produced at operation by direct stimulation of the motor cortex.

Coming from the surgical side, I cannot help but emphasize Dr. Turner's clos-

ing remarks in which he called attention to the necessity for a careful neurological and general physical examination as well as special tests so that obvious organic conditions can be ruled out before resorting to this type of therapy. In every case reported the organic changes in the brain were ruled out and definite signs and symptoms were present to give a clue as to the glandular deficiency. An attempt to treat convulsive states without first ruling out the presence of some obvious organic lesion will result not only in failure to relieve the condition but allow irreparable changes to occur before the proper treatment can be instituted. This point was particularly evident in the case I saw

recently. A young man of tall stature with slightly acromegalic features came giving a history of generalized convulsive seizures over a period of seven years. The neurological signs were apparently inconsequential. An x-ray of the skull showed a tremendous calcified mass in the left temporal lobe which undoubtedly has been present for the past several years. Glandular treatment would obviously have failed in the treatment of this case in which surgical removal offers the only relief.

In closing, I feel that we should commend Dr. Turner for presenting this subject to us in this meeting. It is a timely one and presented in a most interesting fashion.

REPORT OF SERIES WITH ALUM PRECIPITATED TOXOID*

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Ever since 1895, when diphtheria anti-toxin was discovered, medical science has been attempting to improve the methods of immunizing children against this dreaded disease. With the advent of alum precipitated toxoid, we thought perhaps the peak of achievements had been reached. This product was and is supposed, from the reports of different investigators, to produce an immunity, with an even greater antigenic titer than that produced by the unprecipitated toxoid, with only one injection of from one-half to one cc. The advantage of this product is obvious with its saving of time, effort and expense.

Alum precipitated toxoid was first advocated by Glenny and Barr. This toxoid is prepared by adding aluminum potassium sulphate to toxoid that has been prepared in the usual manner—by detoxification with formaldehyde—until no further precipitate occurs. This precipitate is washed twice with normal saline solution and then the resulting precipitate is suspended in normal saline so that 1 cc. contains the proper number of flocculating units. This is determined by testing the anti-toxin on guinea pigs, six weeks after

they have been injected with a single dose. After experimentation, the manufacturers found that a dose of five units would protect a guinea pig against as much as 450 minimum lethal doses, therefore they advocated the use of a dose of five units or one-half cc. of the standard as advisable.

Graham, Murphree and Gill of the Alabama State Board of Health make the following reports and comments: "The results of immunization of children clearly indicate that a single injection of the alum precipitated toxoid results in an immunity in a high percentage of cases. A single injection seems to be as effective as two or three injections of the unprecipitated toxoids. The group of children, who were known to be strongly Schick positive prior to the injection of toxoid, yielded 92.4 per cent completely negative Schicks from two to six months later with only a 1 cc. injection."

Graham, Murphree and Gill summarize their results as follows: "A single injection of from 5 to 10 units of precipitated alum toxoid has rendered 171 or 92.4 per cent of 185 strongly Schick positive children Schick negative. Of 613 children, 592 or 96.6 per cent, were Schick negative when tested from two to four months aft-

*Read before Section on Pediatrics, 42nd Annual Meeting, Tulsa.

er a single injection. The original immunity status was unknown, but 72 per cent were pre-school children, where the highest rate of susceptibility is found."

In a later report Baker and Gill confirm the earlier work of Graham, Murphree and Gill. They obtained a percentage of 100 per cent Schick negatives in 197 originally Schick positive children. In another group of 1400, not previously Schick tested, they obtained 99 per cent Schick negatives after immunization with one injection.

They corroborate their own experience with that of others with whom they have communicated. McGinnis and Stebbins of Virginia in a group of 579 Schick positive children obtained approximately 95 per cent negative Schicks with one injection. Massey of Maryland reports 98.8 per cent negatives in a group of 93 colored children.

So, with a great deal of confidence, I started my series, using at first only one-half cc. or 5 units of the standard alum precipitated toxoid as advised by the manufacturers. My series contains only 40 children. As the results were so poor in comparison with those with the unprecipitated I deemed it advisable to return to my former methods. The degree of susceptibility of these children was unknown prior to the injection. Two months after the dose of precipitated toxoid, I only had 25 Schick negatives out of the original 40, making a percentage of only 62 per cent, which was far below that of the other reported series and investigations.

The original investigators and manufacturers claimed a minimum of reactions, which, of course, is of paramount importance. My experience parallels theirs. Of the 40 children injected, only one had any reaction whatsoever, and in that case I had accidentally injected the dose intracutaneously instead of sub-cutaneously. An induration and redness persisted for about six weeks, without any general manifestations, finally subsiding with no complications. Even though no reactions have been observed, we must not disregard the possibilities of reactions to even small quantities of alum. It is reported that when small quantities of the soluble salts of alum are introduced into the circulation they produce a slow form of poisoning characterized by motor palsies and areas of local anesthesia with fatty degeneration in the kidney and liver. The nerv-

ous symptoms have been shown by Doelken to be due to anatomical changes in the nerve centers. There are often symptoms of gastro-intestinal inflammation, which is, presumably, the result of the effort of the glands of the intestinal tract to eliminate the poisoning.

In conclusion, therefore:

1. While my series of 40 is quite small, I can only report a percentage of 62 per cent Schick negatives from one injection of the alum precipitated toxoid. This is quite contrary to the reports of the original investigators and the manufacturers.

2. While reactions were negative, the possibility of the toxicity of alum, even in small quantities, must be borne in mind.

3. While the possibilities of an immunizing agent, which will produce as high or higher antigenic titer as the unprecipitated toxoid with only one injection, is most encouraging with its saving of time, effort, and expense, especially in public health work, the present product, alum precipitated toxoid does not bear out its claims, according to my experience.

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—O—

FATE OF THE "GOOD CHRONIC" CASE OF TUBERCULOSIS: YARDSTICK FOR RESULTS OF THORACOPLASTY

In order to determine what happens to "good chronic" cases, Lawrence Brown, Saranac Lake, N. Y., and Homer L. Sampson, Trudeau, N. Y. (Journal A. M. A., Sept. 22, 1934), studied 336 patients at the Trudeau Sanatorium and forty-seven patients treated in the village of Saranac Lake. The condition of the patients was noted at the end of five and when possible at the end of ten years. Few of these patients received any form of surgical treatment and if so they did worse than those who received none. At the end of five years 80 per cent of the "good chronics" among the Trudeau patients were alive and only 38 per cent of the "bad chronics." Of the "good chronics" 54 per cent were at work and of the "bad chronics" only 12 per cent. The "good chronics" do remarkably well and their conditions show little change in the number working at the end of ten when compared with those at the end of five years. During the first three years 14 per cent of the "good chronics" and 50 per cent of the "bad chronics" die, while at the end of five years the figures are, respectively, 19 per cent and 63 per cent and at the end of ten years 32 per cent and 75 per cent. The difference between the results of treatment in these two groups is very striking. Poor results were obtained from ineffectual artificial pneumothorax.

A GENERALIZED SKIN ERUPTION WITH GASTRO-INTESTINAL INVOLVEMENT DUE TO TWO DIFFERENT SPECIES OF FUNGI*

ONIS GEORGE HAZEL, M.D.
JOHN HENDERSON LAMB, M.D.
OKLAHOMA CITY

Although this case first came under our observation several years ago, we believed that a report of it was warranted at this time because of the rarity of such an extensive involvement by fungus organisms, because of the interesting mycological findings, and because of the experimental therapy tried during the past year.

It seems that in this case we are dealing with two fungus organisms: (1) an involvement of the oral cavity and gastro-intestinal tract with *monilia albicans*, and (2) microsporon infection of the nails, hair and skin. The microsporon infections, of course, are not rare, but these yeast-like organisms—the moniliae—are creating increasing interest as etiologic factors in various diseases.

Bonorden¹, in 1851, described a monilia isolated from decayed wood. In 1906 Rajat², a Frenchman, reported the isolation of three varieties of this fungus from cases of thrush. Although the moniliae have been commonly associated with thrush and tropical sprue, numerous dermatoses have been attributed to this yeast-like fungus. Wachowiak³ suspects the moniliae as the causative organism in psoriasis. Sensitization of this organism has been reported by Frost and Sutherland⁴ as "moniliatids". Plaus, Hesselton and Borts⁵ isolated thirty-nine strains of moniliae from vaginal secretion. Isolation of moniliae from cases of bronchial and lung infections have been reported.

Quite recently in the American Medical Association Journal, Bakst⁶, of Boston, discusses three interesting cases of pulmonary moniliasis, and Traut⁷, et al., of Chicago, report moniliasis of the skin in two diabetic cases. Greenwood and Rockwood⁸, of Boston, report a fatal case of monilial infection of the skin, and Lewis⁹ a fatal case of pulmonary and gastric moniliasis. The association of monilial infection with

chronic debility diseases has often been noted (Boggs¹⁰) (Joeekes and Simpson¹¹) The organism has been found frequently as secondary invaders in pulmonary tuberculosis and neoplasms of the lung.

LABORATORY EXAMINATIONS

The blood counts were made on three different examinations. One made December 5, 1933, showed 4,400,000 red blood cells; 6,000 white blood cells; 72 polymorphonuclears and 28 lymphocytes.

Blood cultures have been constantly negative. The blood sugar was 96.5 mg. and the urine was normal. A roentgenogram of the chest showed only a slight fibrosis around the hilus.

Extemporaneous preparation from the tongue surface in 40% NaOH showed a tangled mass of delicate septate mycelium with an occasional terminal bud. NaOH preparation from the skin showed a much larger type of mycelium without terminal buds.

Scrapings made from the tongue planted on Sabouraud's agar at 37° C. produced, in twenty-four to forty-eight hours, a creamy, shiny, moist colony. Young cultures showed almost entirely yeast-like cells with a few branched, rudimentary mycelium. Older cultures showed more mycelium and fewer yeast-like cells. In a gelatin stab the fungus grew with an inverted pine tree appearance. No ascospores were ever found.

Maltose and dextrose were fermented with acid and gas; sucrose with acid only. Lactose was not attacked. One-half cc. of a heavy suspension of the organism when injected in rabbits produced death in two or three days. Autopsy of the animals showed the formation of small, multiple, disseminated, whitish nodules over the surface of the kidney and heart from which smears showed yeast-like cells and short, branching mycelium.

PRECIPITIN TESTS

Extracts of this organism prepared by

*From the Department of Dermatology, Crippled Children's Hospital, University of Oklahoma, service of Dr. Everett S. Lain, and read before Section on Dermatology, 42nd Annual Meeting, Tulsa.

the method described by one of us (Dr. Lamb¹²) when laid upon a serum from a rabbit previously immunized with *M. albicans* gave a precipitation of 1:500 dilution, while serum from rabbits immunized with *M. parapsilosis* and *M. krusei*, two other types of moniliae, showed a titre of only 1:50 to 1:2, respectively, with this extract. These tests all seem to prove this organism to be *monilia albicans*.

Precipitin tests done with the patient's serum have varied. Several times a titre of 1:250 was produced; other times a very low titre was produced.

These same fungi were isolated from her feces, but we could not recover any monilia from her nails, skin or hair.

From different sites of the skin and hair, cultures were made. When planted on Sabouraud's agar at room temperature cultures of a fawn-colored, wooly fungus with a lighter tuft in the center were repeatedly produced.

Microscopically the mycelium was fine and septate. Long, narrow branches of the aerial mycelium, swollen at the ends, were recognized as the so-called "spindle spore," which is typical of the microsporoon lanosum. The ringworm fungus is found more frequently in cases of animal origin and is not a strictly human variety.

HISTOPATHOLOGY

Sections of skin were removed at the active edge of a lesion. Stains were made for fungus which were positive by the Brown-Brenn¹³ stain in several of the hair follicles.

The section stained with hematoxylin and eosin showed a thickened, irregular epithelium covered by a parakeratotic scale. The epithelium is edematous with extra and intra-cellular edema and considerable perivascular infiltration in the upper corium.

CASE HISTORY

Elizabeth King, age 23, was admitted to Children's Hospital in 1927 for a sore mouth and extensive skin disease. The mouth condition had been present for seven or eight years, and the skin involvement for three or four months. The condition of the mouth had not at any time interfered with eating. The condition has been progressive and treatment has only, for short intervals, changed its appearance. She has been unusually free from gastrointestinal symptoms.

Physical examination: A well-developed white girl, age 23, not acutely ill. On the right side of the neck, on arms, and on abdomen are irregular, erythematous plaques, with elevated borders and more clear in the center. They vary in size from 1 cm. to 3 cm. in diameter. The finger nails and toe nails are

rough, elevated, opaque, and brittle. The cuticle is involved in an inflammatory condition. The lesions are sharply margined and the central areas are scaly. The tongue is deeply fissured, and covered with a grayish-white, heavy, moist coating. The buccal mucosa is likewise involved. Vaginal and rectal examination was not made upon admission. The mouth and skin lesions have grown progressively worse during the past seven years. She now swallows with difficulty and the involved skin is thicker and eczematoid.

TREATMENT

The mouth condition was treated with gentian violet and other local applications by the dental department and was unchanged by therapy. During the first few years local applications, ultraviolet light, and superficial x-ray were used on the skin with discouraging results.

In August, 1932, five years after first admission, trichophyton extract was started and used intracutaneously for five months with little change in the condition. In January, 1933, an autogenous suspension of *monilia albicans* isolated from her mouth and heated at 56° C. for one hour was begun. It was given intracutaneously and produced moderate necrosis of the skin at the site of injection. By May, 2, 1933, a great improvement in the skin was apparent, but on May 6, 1933, she developed a severe secondary infection of the hands and immediately suffered a severe relapse of the skin lesions. Local applications and hot packs cleared the hands. Subcutaneous injections of Lilly's entolyslate and typhoid vaccine were given during June, 1933, with little or no effect. She continued to take large doses of K. I.

In February, 1934, we started giving intracutaneously an extract of microsporoon lanosum isolated from her skin lesions. This was prepared according to the directions of Muskatblit¹⁴. It is thought to contain both the exo and endotoxins.

At the time this therapy was begun the arms were relatively free of skin lesions. The first injection produced a severe reaction and was soon followed by an extensive involvement of the arms with lesions similar to the original ones. This was given in increasing doses for one month and then discontinued.

On April 5, 1934, we started artificial fever therapy using a conditioned air cabinet heated with infra red elements. We gave six treatments at irregular intervals of four to seven days. The temperature was raised as high as 106.2° F. and sustained for one to three hours. This did not

accomplish any striking change in her condition, but everyone who has examined her since feels that the skin is less infiltrated.

DISCUSSION

In this case we have a history of monilia albicans infection of fourteen to fifteen years' duration, and a generalized skin involvement due to microsporon lanosum of seven years' duration. She has been seen by our leading dermatologists, including Fox, Sutton, Denny, and others for seven years. Many suggested types of therapy have been tried. We felt that the use of the monilia suspension would help to establish an active immunization. We feel that vaccine therapy in treatment must necessarily be limited in its usefulness to those cases in which the stimulus already provided by the infection is inadequate to call forth a response, while the host's tissues are in a position to respond if an adequate stimulus is applied. This probably confines its successful use in treatment to localized lesions instead of acute or generalized infections. We tried to justify the use of typhoid vaccine and bacteriophage on a basis that they might act as a non-specific stimulus.

We used the extract of microsporon lanosum isolated from her skin lesions on a basis that it might desensitize her to this superimposed infection and enable her better to produce antibodies to the gastrointestinal monilia infection. We recently used artificial fever therapy, feeling that it would increase metabolism, cell permeability and phagocytosis, thereby perhaps stimulating antibody response. We appreciate the fact that there are probably innumerable factors concerned with infection and immunity. Many of these factors may be entirely non-specific in their effect. Under such influence may be placed diet, acidity of stomach upon gastric and duodenal bacterial flora, proper balance of vitamins, fatigue, changes in temperature, changes in humidity and atmospheric pressure, seasonal fluctuations, presence of subnormal or unusual amounts of normal chemical constituents in the body. Beerman¹⁵ has said that his cases of leather dermatitis involved elements of specific allergic sensitivity and of contributory or induced sensitivity dependent on focal infection, fungus infections and in-

juries to the skin itself, and on certain constitutional factors. We think that this is equally true in our own case.

SUMMARY

1. A double infection of both monilia albicans and microsporon lanosum.
2. Recovery has been retarded by a collapse of patient's immunity mechanism.
3. All treatment has been unsuccessful.
4. Immunity and infections are dependent upon many factors.

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THE DIONNE QUINTUPLETS

During the last 500 years there have been thirty-two authentic cases of quintuplets recorded. Of these, only one group of all five lived about an hour, and of another group, only one of the five lived for fifty days. To these records Allan Roy Dafoe, Calander, Ont. (Journal A. M. A., Sept. 1, 1934), adds a short history of the birth and early care of the Dionne quintuplets. At the time of writing (July 28, 1934) the five babies are thriving and healthy at the age of two months and are gaining steadily in weight. He expresses his thanks to the newspapers for the invaluable supplies and equipment and states that it would be impossible to thank the many people "in" and "out" of the profession whose help has made it possible to keep the children alive, and also the work of the Canadian Red Cross Association, which from the first has given cordial cooperation, and has taken over a good share of responsibility for the welfare of the babies. Above all, the family and he are grateful to the Ontario government, which has supplied the whole family with food and clothing, has repaired the road and has definitely supported the efforts against public display. With such cooperation he hopes the babies will continue to thrive and will be a credit to their family and to their country.

PNEUMOPERITONEUM AS A PRACTICAL PROCEDURE IN GYNECOLOGY*

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I do not wish to come before you with an apology for my paper, but in self-defense I wish to state that I am painfully conscious of the fact that I have undertaken to write on a topic in which I am far from proficient and that I have done too little work in this field to justify any sort of conclusions. My excuse for presenting it at all is that I accepted the invitation knowing that I would be compelled to do something with this very interesting new development in the field of diagnosis. But, alas, the time has been too short and my opportunities have been too limited to accomplish much.

However, the imperfect paper has this to recommend it, viz.: It deals with the practicability of the procedure in the small centers and as an aid in every-day work by those of us who do not have access to all sorts of consultation, technical and otherwise.

The conclusions of all the men who have used pneumoperitoneum in the large medical centers are highly in favor of it, and many of them consider it indispensable. Granting it is valuable under such circumstances, we are interested to know if you and I could profitably employ it at the crossroads.

I am afraid some surgeons may not wish to find a non-surgical procedure for determining the state of affairs inside of the peritoneum for that would rob them (if, indeed, any such exist) of the time-honored system of determining in a perfunctory sort of way the condition to be surgical and depending thereafter upon their skill to deal with whatever presents itself when the abdomen is opened. The exploratory operation has been overworked, and has done its share to bring surgery into a state of disrepute.

A little investigation will quickly reveal how unsatisfactory a manual pelvic examination really is for we find the number of opinions secured is limited practically

only by the number of consultants and especially so in obese subjects; in those who have had previous pelvic surgery; early pregnancy, and in young virgins.

Despite the fact that pneumoperitoneum is a relatively recent diagnostic procedure there has developed quite extensive literature on the subject.

The Rubin test was a great boon to gynecologists but it is not yet used to the extent that its value merits. When lipiodol was introduced to supplement or replace the older method of depending on the intra-uterine pressure readings for determining tubal patency as well as for visualization of the uterus and tubes, a still more remarkable advance was made. A further advance in pelvic diagnosis was made when, about fourteen years ago, Peterson discovered and recommended the use of the x-ray in connection with pneumoperitoneum. Perhaps the most valuable contribution since then was made in 1926 when Stein published some work on the combined use of iodized oil and pneumoperitoneum. In 1932 this author had done over 1,000 of these combined examinations and finds it continually more effective and valuable as a diagnostic measure. While this procedure has been used largely as an aid in gynecological conditions, Carelli especially has used it to visualize all of the solid organs inside of the peritoneal cavity and it is my prediction that as the technic is perfected that a far wider range of usefulness will appear than has yet been developed.

Air was first used as a medium, then oxygen, and now carbon dioxide has been universally adopted because of its safety and also because of its rapid absorption. This gas was formerly introduced via the cervix and tubes and served the double purpose of testing tubal patency and of permitting the x-ray visualization of the pelvic organs. Three objections may be raised to this method. First: It is very difficult to secure an air-tight compression at the os by means of the rubber disc

*Read before Section on General Surgery, 42nd Annual Meeting, Tulsa.

on the canula used in the cervix. Hence we find leakage very often and we never know just how much gas actually enters the peritoneal cavity. This difficulty is especially prone to develop in cases of cervical lacerations. It is therefore necessary to repeat the test with all the undue trouble and expense entailed. Furthermore, it often happens that the very case in which you need it most is one of suspected pregnancy and in that event it is never safe to employ it. Besides, it is, of course, ruled out in cases of known patency of at least one of the tubes. I have found it also to be considerably more painful and more disagreeable to the patient to use the trans-uterine route. I think therefore that the trans-abdominal route should be routinely employed for the introduction of the carbon dioxide, leaving the lipiodol injection into the uterus to outline the uterine cavity and to determine the state of the lumen of the tubes. My experience agrees with Stein that a combination of two procedures is far more valuable than either used alone, in case there are no contra-indications to the introduction of a foreign body into the cervix.

The minimum equipment for the practical utilization of this procedure is: (1) Suitable x-ray with a Bucky diaphragm, the position of which can be varied. (2) A Keyes-Ultzman type of silver cervical canula and a tank of carbon dioxide. It would be well to own the special table as developed by Stein and devices for turning the patient as devised by Carelli, but since it will be a long time before all of us possess such equipment, I wish to present the way I do it in just an average office, for it is an office procedure: I use a Braasch-Bumpas urological table with a built-in Bucky which permits any degree of elevation of the hips, and the carbon dioxide apparatus designed by Dr. Aldridge. This device permits us to measure accurately the amount of gas used as well as the pressure under which it is injected. This amount depends on the type of patient and on other circumstances. The large quantity, as high as eight liters, as used by Carelli, is neither desirable nor necessary for the examination of the pelvic organs. We use a minimum of 400 ccs. and a maximum of 1200 ccs. and depend on the distention and apparent distress of the patient to determine the interval amounts. I have observed that the intra-abdominal pressure varies greatly in dif-

ferent subjects, being as low as 10 mm. of mercury sometimes. When the pressure is raised above 40 they complain of considerable discomfort.

When lipiodol is used in connection with the gas, as it should be practically always in the female, a Keys-Ultzman type of canula fitted with a hard rubber tip with which to close the os and some device for holding it firmly against the cervix are essential. The self-retaining speculum devised by Stein is valuable but not essential as this function may be performed by an assistant. A bullet forcep for grasping and holding the cervix completes the armamentarium.

A slender needle with a short bevel is introduced into the peritoneal cavity and attached to the gas machine which has been previously adjusted to deliver the gas slowly. The recommended site for inserting the needle is two inches below the umbilicus and in the linea alba, but almost any site will do. No danger need be anticipated from this simple procedure if one is careful to see that no blood is in the needle and if the usual aseptic precautions are used. If the needle has not entered the peritoneal cavity a superficial emphysema will result but with no harmful effects. This can be determined early by noting the steady rise of the mercury.

The contra-indications such as pregnancy, gonorrhea, menstruation, other uterine bleeding, etc., do not hold when the trans-abdominal route is used. In fact, no serious contra-indications occur to me except advanced myocarditis or general debility in which any degree of shock might prove harmful. Practically all of the men doing this work report it to be free from danger both as to immediate and subsequent harm. There is certainly no more danger than an ordinary tap for the introduction of saline into the peritoneal cavity. The carbon dioxide has definitely proven to be harmless, rapidly absorbed, and free from bacteria as it comes from the tube.

There is very little pain when only a diagnostic amount of gas is used. In a recent case I explained to a woman what was being done and what to expect. She complained long and loud of all I had led her to look for and so greatly did she moan that I decided to stop short of the intended amount of gas, when I discovered that the side stop cock on the tube had been letting all of the gas escape and she had received not a bit of it. Pain in the shoul-

der region is fairly constant if large amounts have been used. In the beginning, owing to the beginner's natural hesitancy, I used far too little gas which resulted in inferior pictures. The cavity should be fairly well filled and with increasing experience I am using more gas.

When it has been determined that gas has been into the peritoneal cavity it frequently happens that the column of mercury rises, but a slight to-and-fro movement of the needles will free the lumen, as will be indicated in the drop in the pressure.

The chief point in the preparation of the patient is to have the bowel thoroughly evacuated for two days previous to the examination. She should have a saline laxative and be placed on a diet of small residue. The bowel should be evacuated just prior to the examination.

The most discouraging feature of this procedure is our inability to read the x-ray plates. This same difficulty is experienced in all phases of x-ray work where expert consultation is not available, but we do not refrain from x-raying a bone, a joint, a chest for that reason, for while we may not be able to extract the most information, sufficient knowledge is acquired to justify the work. These x-ray films are not especially difficult to interpret, and in doubtful cases we have found the roentgenologists of the medical centers cooperative and helpful.

RECAPITULATION

1. Pneumoperitoneum is a marvelous step forward in pelvic diagnosis, and, in fact, in many other intra-abdominal conditions.
2. It is a safe procedure, but it requires rigid technic. It can be safely done in the office.
3. Its contra-indications are few and are definitely defined.
4. The necessary equipment is not elaborate or expensive and is available to most physicians.
5. Carbon dioxide is superior to all other materials that have been used.
6. It should not be used routinely, but only when a careful history and accurate examination does not suffice and only complementary to these procedures.
7. Many exploratory operations can be avoided by its use.

8. The trans-peritoneal route is by far the most satisfactory, but in gynecology, and where there are no complications, it should be used in combination with trans-uterine lipiodol.

9. We live in a small city with all the resultant disadvantages in the way of expert consultants, limited equipment, and scarcity of clinical material. We have neither the time nor the means to do research.

No originality is claimed for anything mentioned in this paper, but our one year of experience encourages us to continue its use and to recommend its trial to others so situated, with the belief that as we progress in the required technic a whole new field has opened to the diagnostician; that many mistakes heretofore unavoidable may be anticipated; and that many useless exploratory operations may be left undone.

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INTESTINAL PARASITIC WORMS IN THE UNITED STATES: THEIR DIAGNOSIS AND TREATMENT

Harold W. Brown, Nashville, Tenn. (Journal A. M. A., Sept. 1, 1934), has compiled data in as concise a form as possible which should be of help to the general practitioner in the treatment of individual cases of infestation by any of the common intestinal helminths found in the United States. The ridding of a patient of intestinal parasites has for centuries been considered a serious procedure, and violent methods have been used to that end. Much of this treatment was felt necessary owing to the inefficiency of many anthelmintics, and it is not surprising that the treatment of intestinal parasites was carried out with a good deal of dread because of the danger of such procedure. All the older and more commonly used anthelmintics are occasionally quite toxic, and it is well known that each causes severe intoxication in certain persons, this usually being ascribed to the idiosyncrasies of the patient. Although thousands of cases have been treated with some of these substances without a fatality or definite signs of intoxication, severe injury and even death have followed without any warning the administration of these anthelmintics in proper therapeutic amounts to apparently normal persons. During the past ten years there have been found for the treatment of certain types of intestinal helminths several new substances which are fully as effective as any of the older remedies and which, as far as is known at present, can be given without fear of intoxication. On the other hand, there are no effective and safe drugs for all types of intestinal helminths. For successful treatment of patients harboring helminths, one must consider the life cycle of the parasite, the method for determining its presence, the substances that may be used most successfully against a particular parasite and the details of their administration, as well as methods of estimating the effectiveness of treatment. It should be remembered that these various species of parasites of such extremely different types must be considered and treated individually, for a drug that will remove practically 100 per cent of one type of parasite may be ineffective against another.

THE NEURASTHENIC PATIENT*

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TULSA

During the past few years, with the trend of medicine directed into the more highly specialized fields, the study of the patient as a whole has become almost extinct. Patients are shunted from one doctor to another in search of some obscure cause of their troubles. No one of those consulted seems to assume the responsibility or to make a close study of that individual. When no definite trouble is discovered for which a cure might be effected, or the patient has had first one then another operation without relief, and is finally dubbed a "damned neuro," is it any wonder that he begins to lose confidence in the profession of medicine, or at least in some of those who practice it? We are all guilty of mistakes, but that is no reason why we should not profit by them, and upon the next occasion give more consideration and study to each individual in order to prevent wrong judgments or erroneous diagnoses.

Quite recently we have been confronted with the trend of outside influences to try to force upon us state medicine. If, and when, it comes, the patient will, in my thinking, be worse off. The proposed plan, to be of any value, would have to safeguard the quality of medical service, provide preventive and curative services, and preserve the personal relation between patient and physician. These major recommendations, I am frank to say, would hazard the success of group practice, which would preclude much attention for the individual.

We hear a great deal about the rise to prominence of the various cults, nostrums, and the increasing use of patent medicines. A great deal has been said about legislation to control them, but that is only a make-shift, temporary relief. The most important thing is for all of us to do more real work in studying our patients, to keep up with the more recent advances in medicine, and to do less talking about what the other fellow is doing. This constructive procedure will do more

to restore the waning confidence of the public than can well be imagined.

This condition can be corrected, but we will have to begin at the source, namely, our medical schools. Sullivan¹ says: "When medical training is made to include precise information about psychogenic forces in disease, then, and only then, will the physicians be adequately trained for management of all people."

How many of us, even now, know very many of the fundamental principles of medical psychology? We have been taught a great deal about pathology, bacteriology, surgery, and chemistry, but very little about psychogenic factors, emotional disturbances, and functional disturbances. We have had the principles of foci of infection so well grounded that a great many people in whom none can be found, are often told that there is nothing wrong and that their troubles are only imaginary.

Again, the surgeons believe that by surgical removal of various organs, that all of the patient's troubles would be over, because they can always cite one or two cases where certain procedures resulted in the individual's complete cure. We are not condemning surgery, but we are condemning useless surgery, that which is administered in these obscure, so-called chronic cases. It is our opinion that we should first know everything about the patient, then decide. We have all seen many individuals who have had three and four major operations for obscure adominal pain.

In the past few years newer procedures have been forthcoming. In reading the literature we can almost explain any phenomenon on the basis of allergy. Yet in actual application our results are very disappointing.

Later, with the isolation of new hormones, the endocrinologists are explaining everything on the basis of endocrine hypo or hyper function. However, the knowledge is yet too meager for us to arrive

*Read before Section on General Medicine, 42nd Annual Meeting, Tulsa.

at any conclusions as to what we may expect.

All of us in practice recognize that a certain per cent of our patients present a nervous element, either primary or as a consequence to a physical disorder. But I most seriously question whether or not we realize what a great percentage this includes. Moersch² in the analysis of five hundred consecutive patients at the Mayo Foundation reports psychogenic factors in forty-four per cent. Stevenson³, in studying one hundred and fifty patients in a gastro-intestinal clinic, states that there was an important emotional problem in two-thirds of the cases.

Classification of the patients who present themselves to the physician for examination is as follows:

1. Those that have a definite, clear-cut disease entity.
2. Those that have definite, obscure trouble, but with the condition often masked by nervous or emotional symptoms in which it is difficult to differentiate the exact cause.
3. Those that are emotionally unstable or who have constitutional inadequacies.
4. The true psychosis.

In this paper we intend to deal with the second and third classes. It is not our intention to consider the true psychosis, or those in whom there is a clear-cut disease present.

Definition of these types which we are to consider is found in the following cases:

4. Illustrating type No. 2, we find a female, age fifty-eight. The patient complained of vertigo, nausea, headache, roaring head. This condition began acutely after the death of her mother in 1915. However, she had had headaches since menstruation began. The vertigo, nausea, and headache lasted a few days, and were severe for a few hours. In 1921 the patient began to have severe attacks which lasted ten or twelve hours. She was told she had malaria, also bilious attacks, and menopause. Examination was negative, but during the attack the patient had nausea, vomiting, and headache for twenty-four hours. Nystagmus was present. She was unable to stand and would fall if she got out of bed. The attacks began acutely by falling as in epilepsy. A diagnosis of Meniere's disease was made, for which quinine, six grains a day, was prescribed. This has stopped the attacks for one and one-half years.

In illustrating type No. 3 we find the following case applicable:

5. A young girl, age twenty-six, complains that she has not felt well for six or seven years. She is run-down and tired. However, at times there are intervals of several months when she may feel well. She is nervous, constipated, has no appetite, no energy.

She is tired and worn out. For several months she has vomited each morning before or after breakfast. After every meal she has indigestion. Menses are regular, but the patient has indigestion, headaches, and visual disturbances. She is unable to gain weight. She had recently been examined and told that she had a chronic gall bladder disease, that the gall bladder must be removed.

Family History: Mother living and well; neuralgia before menopause. One sister had sick headaches. Physical examination was essentially negative. A test for vagotonia showed marked exacerbation of symptoms with pilocarpine; relieved by atropine.

On consideration of the mental side, it was found that the patient was practically the sole support of the family. Her position as stenographer was one that she did not like. She would get up in the morning wondering whether she would be sick, or whether she would feel good all day. At breakfast she would become nauseated.

By psychotherapy and change of position and outdoor exercise she now, two years later, has gained weight and feels good. There is no nausea or headaches, and she still has her gall bladder.

* I believe that if this girl had had her gall bladder removed she would have had to have another operation sooner or later, because the cause would still have been present.

To understand more about individuals and personality, it would be well to briefly describe some of the types of individuals and what we may expect to find in each. First, I should like to define *constitution* as given by Pende⁶: "The constitution is the morphological, physiological, and psychological resultant (variable in each individual) of the properties of all the cellular and humoral elements of the body, and of the combination of these in a special cellular state, having a balance and functional output of its own, a given capacity for adaptation and a mode of reaction to its environmental stimuli. Such a resultant is determined primarily by the laws of heredity and secondarily by the disturbing influences exercised by the environment upon the individual's hereditary plan of organization."

The types are as follows⁷:

1. Harmonious or normosplanchnic.
2. Megalosplanchnic or brachymorphic—hypervetigative.
3. Microsplanchnic or dolichomorphic—hypovetigative.
4. Impure or mixed types.

Number 2, the megalosplanchnic type, is characterized by medium stature or below with an excess of bodily mass in relation to stature. The extremities are short in proportion to the trunk. The feet are longer than normal with a tendency to flat feet. Hands are broad and short.

The head is frequently large with a high, sloping forehead. Premature baldness is frequent. There are small, shifting eyes; short, broad nose, thick lips, large mouth, broad, round chin.

The face is often pentagonal in shape. In males the beard is luxuriant, though coarse, in contrast to but little hair on the head and eyebrows. The neck appears large. There are often fat deposits on the back of the neck and other places—pseudo lipomata. The thorax is short and large. The abdomen is conspicuous, the upper part being larger than the lower part. Pelvis is small. Skeleton muscles are short and thick. The skin is tough and oily. In megalosplanchnic individuals the lungs are short; the heart shows a tendency to hypertrophy. The stomach is of the short, horizontal type, and generally large. The genitals are usually normally developed.

This type is marked by congenital hyperplasia of the lymphoid organs. The blood may show a slight polycythemia and hyperchromemia, but variation may tend toward the opposite. There is also a disposition to uric acid and diabetic symptoms. Potassium predominates over calcium with a tendency to alkalosis and retention of chlorides in the tissues.

Of this general group there may be several varieties:

1. The hypothyroid variety with parasympathictonic nervous orientation. In this type we see moon face, porcine eyes, oily skin, early white hair. There is a tendency to myxedematous lower extremities; migraine, constipation, muscular and articular pains, muscular asthenia. Movements are slow. Psychic reactions are slow. The individual is of average intelligence, but never brilliant. The character is kind, cordial, expansive, and optimistic. The sexual function is normal.

2. The hypopituitary type tends to infantilism. The beard is fine. The stature is lower and is associated with a tendency to adiposity, especially in the lower abdomen, breasts, and pubes. The skin is pale and delicate, and the hair is fine and thin. The hands and feet are small. Genitals show a lack of development with a deficiency of sexual energy; frequently there is sterility. The character is good, but is subject to great changes of mood, to over-excitement or depression, and to impulsiveness. In both of these types the blood pressure is low and a great tolerance for sugar is noted.

3. The hyperadrenal variety is marked by a well-developed heart, especially on the left side; high arterial pressure, and high red blood count. The muscles and strength are well developed. This type may have hypertrichosis. The character is active, impulsive, violent, restless, and strong-willed. The skin is dry. Sexual function is normal.

4. The hypergenital variety shows excessive development of the sexual characteristics. These subjects are of low stature with short legs, large skull, early baldness and white hair, poor teeth, and a tendency to obesity. There is a lack of muscular development and arterial hypertension as found in the preceding type. The character is euphoric and expansive, with but mediocre intelligence.

In this general group we expect to find disease manifestation more characteristic of the arthritic group, namely, uricemia, gout, diabetes, obesity, asthma, asthmoid bronchitis, various chronic or recurrent rheumatisms, lithiasis, chronic pruritis, recurrent desquamative dermatosis, mucous colitis.

5. The constitutional vagotonia variety (Eppinger and Haus⁶) shows an exaggerated oculo-cardiac reflex; respiratory arrhythmia; bradycardia; hyperperistaltic phenomena; spasms in the stomach, intestine, bladder, uterus; mucous colitis. Also we encounter protein intoxication and anaphylactic crises and eosinophilia.

Number 3. The microsplanchnic hypovegetative constitution is characterized by a stature which is often higher than the average, but may be average or less. The fundamental characteristic is a lack of proportion of the trunk and extremities with a deficiency in weight (constitutional thinness). The size of the abdomen is deficient in comparison with the thorax, and the exaggerated length of the extremities contrasts with the length of the trunk. The head is greatly developed in the parietal and frontal regions with a flattening in the occipital region, and a high vertical forehead. The face is narrow with a pointed chin. The skull is small in proportion to the stature. The hair, which is thick and more or less wavy and curled, grows low on the forehead and temples, and is coarse and shiny. There is no tendency to seborrhea or baldness. The eyes are large; the nose is long and narrow. The skin is thin and smooth with very little fat. The beard is well devel-

oped, and women may have down on the upper lip. The teeth are often excellently formed, but may be irregular. The neck is long and thin—a swan neck. There is a long thorax which is flattened in antero-posterior direction. The abdomen is found to be small in size compared to the thorax. It may be rounded and prominent, enteroptotic abdomen. The abdominal walls often are hypertonic, but in women they may be flaccid and prominent. In women the hair comes up from the pubes along the linea alba, in the intermammary sulcus, and around the nipples. There is a marked growth of hair, especially over the forearms and legs. The skeletal system is well developed. The muscles may be flaccid or well developed. Hands and feet are long and slender with long fingers. Not infrequently the hands and feet are cold and bluish and covered with a cold perspiration; however, the opposite may be true.

The sexual development is rather variable. It may be pronounced, or in males it may tend toward the feminine characteristics. In females a narrow pelvis, small breasts, hypoplastic uterus, and masculine distribution of hair are noted. Those microsplanchnics in whom the hypogenital state is more pronounced are called the hypogenital type.

In considering the internal organs, the heart is often found to be small, in a vertical position, with a long and narrow aorta. Blood pressure is always low and the pulse is rapid and unstable. We may find the vascular system normal, but there may be a hyper-excitability or sympathicotonia. The blood usually shows a chloro-anemic character with hypoglycemia. There is a predisposition to tuberculosis. There is an atonic and ptotic stomach, gas, poor appetite, and difficulty digesting large quantities of food. Weakness of the kidneys is evidenced by orthostatic albuminuria, phosphaturia, and psychic glycosuria.

Oligodipsia is characteristic of many microsplanchnics, and oliguria is also found. There is an instability of fixation of water in the tissues. We find a tendency toward the predominance of the tonus of the sympathetic nerves as revealed by tachycardia, angiospasm, white dermographia, inhibitive gastric peristalsis, and hydrochloric acid secretion; cutaneous hyperthermia, especially in the extremities, emotional glycosuria, and exaggerated reaction to adrenalin.

Microsplanchnics are subject to tuberculosis, typhoid, dyspepsias, progressive pernicious anemia, gastric ulcers, neurasthenia, cardio-vascular neuroses, hyperthyroid, and Addison's disease.

Time does not permit to take up further the various inadequacies of the individual organs or systems.

Let us now consider our "neurasthenic patient" from the standpoint of an emotionally unstable individual who, when faced with the necessity of "fight or flight," is confronted with the dilemma either of being defeated in the fight or of losing his self-esteem by "fleeing," grasps at the surcease, sympathy, and attention offered by ill-health. That the emotional instability is a result of constitutional inadequacy which he has inherited, we do not doubt. Why some people belonging to these types should develop somatic symptoms under certain emotional stresses, and other people of the same constitutional type under similar stresses should have an entirely different set of symptoms or perhaps remain perfectly free from any complaints whatever, is not understood.

Granting an emotional instability as the underlying cause, what are the precipitating factors immediately concerned in producing physical symptoms? These may be many and variable, and to discover them requires much tact, understanding, skill, and observation. It is at this point that we as internists conforming to the present day trend in diagnosis, often make the mistake of divorcing the mind from the body and of seeking explanation for all the symptoms by physical and mechanical means.

Emotionally unstable patients are unconscious of the fact that their numerous pains and aches are in reality psychogenic in origin, and it does not occur to them to consult the psychiatrist. As a matter of fact it may require considerable tact on the part of the internist to convince these patients that they should consult a psychiatrist, since the major portion of the laity associates mental disease only with insane asylums, locks and keys. Hence the diagnosis of these cases remains largely the function of the internist, frequently after the patient has spent many weary hours (and most of his money) and suffered repeated examinations in the hands of many physicians.

Although it is perhaps out of his province to delve too deeply into psychiatric

problems, it is of importance to the internist to familiarize himself with some of the most common factors underlying the patient's unconscious "flight into illness," and thereby to be enabled to make a positive diagnosis of a psychic conflict as being responsible for the patient's physical symptoms—the so-called "conversion reaction," rather than making a negative diagnosis of neurosis or neurasthenia simply by "ruling out" pathology by means of exhaustive clinical and laboratory procedures.

Edward Weiss⁷, Fremond-Smith⁸, Stevenson², Draper¹, and others to whom we have referred freely in this paper, have called attention to numerous of the more common psychic factors underlying physical complaints. A brief discussion of some of these follows.

The training which the patient may have had as a child may be reflected in, and the mechanisms developed during the early years maintained, throughout adult life. Having been over-indulged, possibly because of a parent's unsatisfied ambition to accomplish some certain aim in his own life, and made to feel perfect in the eyes of his home environment, the child is unprepared to meet the reverses and defeats and failures, some of which must inevitably come when he leaves the sheltered walls of his home. In order to maintain this self-esteem, and at the same time not endure failure, any chance pain or symptom is immediately, but unconsciously, seized upon as a means whereby self-respect may be retained and defeat at least not admitted. So they retreat into the outstretched arms of the adoring and over-sympathetic household where as an invalid each wish is law, each act perfect, and each desire a command. This attitude is frequently carried over into adult life, where it is a common psychogenic factor underlying many complaints of physical ills. Frequently the statement will be made by the complaining wife that she "so wishes she might get well because her husband is so good to her," little realizing that the very fact of his goodness is aiding her "flight into illness."

Financial reverses and business failures, particularly during the past three or four years, have been responsible for many of the ills complained of by those individuals who are unable to accept defeat successfully. Maladjustments in marriage, and sexual inadequacy for whatever reason, be it fear, frigidity, disgust, im-

proper sex-education, also furnish the necessary motive for fleeing into illness as a custodian of self-respect. Occupational maladjustments, especially where injuries and compensation are involved, are factors which are more commonly recognized and studied, because of the pressure brought to bear as a result of the insurance liabilities and damage suits.

There must also be considered the frequent interference in the function of various organs as a result of instability of the autonomic nervous system under emotional stress. The diarrhoeas which developed in a patient during the three-day interim between the drawing of the blood and the report that the Wassermann test was negative, was no less a diarrhoea because it was due to a psychic tension; likewise tachycardia, nausea, indigestion, polyuria, etc., are no less real when they are psychogenic in origin than when due to organic causes. And all of the factors which may be instrumental in causing a "flight into illness" as a defense measure, may also be instrumental in causing functional disturbances, the psysomatic reactions as described by Draper¹.

The symptoms which these patients present are innumerable and varied, and are, of course, well known to you. The following will serve further to illustrate the type of patient:

A widow, age 30, complained of weakness, exhaustion, ease of fatigue and difficulty in swallowing. There was a sense of pressure in the throat but no cough, hoarseness, or difficulty in breathing except for a sense of suffocation at times. There was no regurgitation of food. She had lost thirty pounds in weight in one year. There was slight vertigo and pain in the back of the neck. She was always tense, irritable and unable to relax, and her hands and feet were always cold. There was no abnormal pain, nausea, vomiting, diarrhoea, indigestion, or constipation. She had no urinary disturbance of significance. Menses were somewhat irregular, both in time and amount.

Her husband, who was twenty years older than she, had died two years previously. She had three children living and well. She had had an appendectomy, and salpingectomy five years previously.

Clinical examination showed nothing of consequence until blood study revealed a very rapid sedimentation time and an eosinophilia, whereupon proctoscopic and stool examinations revealed many cysts of *endameba histolytica*.

With great alacrity we pounced upon this discovery with perfect assurance that all would be well. This proved to be the case for a few weeks following treatment. Then, to our surprise, all of her old symptoms began to recur in spite of no further evidence of ameba, and blood examinations, including sedimentation test, indicated no evidence of infection. At this time further inquiry into the personal affairs of the patient revealed that a rift in a clandestine

love affair was in progress. Following the marriage some weeks later the patient began to feel much better.

We believe that during the entire period throughout which we were observing this patient, most of the symptoms were due to the psychic conflict and that the amebiasis was simply an incidental finding.

This case serves to illustrate two important points, namely, that the so-called "neuro" deserves the benefit of a thorough examination, and second, that the incidental findings should not be given the all-important consideration, but that in the course of the examination a study should be made which might reveal some psychic conflict which may be of greater importance than the discovery of some obscure pathology, the importance of which is so often over-emphasized.

The treatment of emotionally unstable patients is not easy. In the words of Noyes⁶, "our theory of psychopathology is more highly developed than our technique of treatment." Each case offers its own particular problem, on the merits of which treatment should be undertaken,

In the first place we must realize that we are dealing with a human patient who has a mind and a personality not divorced from his physical being, and that his symptoms are due to unconscious mental conflicts and emotions.

It is necessary to win his confidence. This is perhaps most ably accomplished by and during frequent contacts occurring in the course of a thorough physical examination which at the same time permits more detailed study of the patient's personality and serves as the basis of later convincing the patient that his disease is not of an organic nature.

By education and explanation this patient must be made to understand the relationship of unconscious mental processes to somatic symptoms, and that his condition is not of an "organic" nature. This is very difficult and the accomplishment of it is perhaps more of an art than a science, and depends to a great extent upon the personality of the physician and the susceptibility and education of the patient. On the surface the patient seems to see the problem but many are unable to understand it sufficiently to gain much practical value or relief.

It is a mistake to tell the patient that he only imagines he is sick, for to him his symptoms are as real as life itself. Perhaps those same symptoms have become

fixed ideas as a result of too much emphasis on incidental conditions by the numerous doctors who have been consulted, with the result that the patient is well nigh inseparable from his "heart condition," ptosis, acidity, autointoxication, biliousness, diets, pus, foci of infection and colitis with its worship of high enemas, flushings, etc.

It must be understood that many of these patients can only be helped, not cured. In some instances it is impossible to make the necessary readjustments in environment, as in the case of some marital relationship, occupations, or child-parent maladjustments.

In conclusion we wish to state that it has not been our intention to venture into deeply involved psychopathology, but to call attention to the fact that a very considerable proportion of the everyday problems confronting the average internist concerns patients whose symptoms are on the basis of psychic and emotional conflicts. It is one of the most common conditions we meet. We feel that we should *look* for the most common diseases and by doing this thoroughly the unusual will be discovered, if present. If the physician realizes that fact, we believe, with ordinary powers of observation and common sense management he will be able to cope with the illness of many of these people. In others the psychopathology may be recognized, but may be of such nature that its management may require the services of one more versed in the detailed ramifications of psychiatry. We believe that this will obviate the loss of patients to various cults, prevent much unnecessary surgery, reduce the cost of medical care to the patient, and finally re-establish confidence in the medical profession which is rapidly being lost.

SUMMARY

1. We have endeavored to show that the problem of the neurasthenic patient presents a definite challenge to the internist.

2. We have again called attention to the necessity of studying the patient as a whole in an effort to determine whether the physical or psychic factors predominate.

3. A brief description of the characteristics of various types of constitutions has been given.

4. Attention has been called to some of the common factors underlying the psy-

chic conflict causing somatic symptoms in the so-called neurasthenic patient.

5. Each neurasthenic patient presents an individual problem which must be studied as such; and treatment governed by the particular nature of the problem.

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DISCUSSION—*By Dr. Ned R. Smith, Tulsa:*

"One swallow does not make a spring." The fact that these two internists have apparently got religion and become converted to a proper method of approach and study of the neurotic patient proves, if nothing more, that there is still plenty of room for more of you to adapt their point of view. At least it is a start in the right direction. If you will take the trouble to carefully read Dr. Shepard's paper and thoughtfully study it you will find that it is absolutely incontrovertible from every angle. It simply boils down to the fact that he has very frankly recognized the psycho-genic element in diseases, that he is willing to face it and make every honest effort to understand the neurasthenic patient. That is the first step. The logical next step would be to treat them along appropriate psycho-therapeutic lines. Such neurasthenic patients are in every physician's office every day and as a practical matter it would be wholly impossible for them to be handled entirely by the psychiatric specialist. The technic of psychotherapy sufficient for the average case, if one cares to put in the necessary time, is easily within the reach of any physician who cares to develop it. In my opinion this point of view on the part of the essayists represents a distinctly constructive step in the right direction. More wide spread practices by medical men will tend to restore us to the proper plane of

dignity and usefulness to the neurotic patient and keep them in our offices instead of making up the clientele of the irregulars. It is all very logical. First understand them, then apply the right psychological methods and many can be helped. One must temper his enthusiasm by the requirements that a certain small proportion represents incurable congenital psychopathic states.

CLINICAL CIRCULATORY EFFECTS OF DINITROPHENOL

A. B. Stockton and W. C. Cutting, San Francisco (*Journal A. M. A.*, Sept. 22, 1934), investigated the effects of dinitrophenol on the circulation in thirteen patients with apparently normal cardiovascular systems. Six of the group were placed at bed rest in the hospital, and control observations of blood pressure, pulse rate, vital capacity and venous pressure were made regularly at 8 a. m., 2 p. m. and 7 p. m. The control period was continued until at least three consecutive results were in close agreement. A quantity of 300 mg. of sodium dinitrophenol was administered orally in three divided doses each day, and the circulation and vital capacity were observed for from four to twelve days. The ambulatory patients were treated in a similar manner, except that the same functions were observed once daily at 4 p. m. Before the observations were made, the patient was required to rest in a prone position without pillows for one hour. Vital capacity and systolic and diastolic blood pressure were not significantly affected by the sodium dinitrophenol. Definite increases in venous pressure and in pulse rate occurred in ten of the thirteen cases studied. These increases showed much fluctuation. The concurrent increases in pulse rate and venous pressure explained the maintenance of normal blood pressure in spite of the marked peripheral vasodilatation resulting from the dinitrophenol. Despite the variability in all observations, it was quite evident that, while no significant changes occurred in blood pressure and in vital capacity, there were definite increases in pulse rate and in venous pressure.

NONALCOHOLIC CIRRHOSIS OF THE LIVER IN THE LEBANON AND SYRIA

According to H. A. Yenikomshian, Beirut, Libanese Republic (Syria) (*Journal A. M. A.*, Sept. 1, 1934), cirrhosis of the liver is of frequent occurrence in Syria and the Lebanon. It is more common in the rural population than in the dwellers in cities. It is particularly frequent in the farm laborers in one district near Sidon and Tyre. Alcohol is not used by these people and they do not use condiments excessively; syphilis is uncommon, but malaria, dysentery and infestation with intestinal parasites are prevalent. The cirrhosis is seen in comparatively young people, 63 per cent of the patients being younger than forty years. The proportion of female patients with the condition is larger in Syria than in America. Enlargement of the spleen is marked and often precedes signs of liver insufficiency. The liver often remains enlarged and coarsely hobnailed. Malaria and amebic dysentery (and especially the combination of the two) seem to be the primary causes of cirrhosis of the liver in Syria and the Lebanon.

RHABDOMYOMA

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Rhabdomyoma, or myoma striocellular, is a tumor containing more or less striped muscle-fibers. In these tumors, which are characterized by their rare occurrence, embryonal type, and appearance in young persons and children, occurring in such positions as the heart wall, bladder, vagina, kidney, and esophagus, the tissue frequently contains cells of various kinds, among which there are found striated muscle-fibers. It seems to be rare to find a whole tumor made up of muscle-fibers, and the admixture is often with such elements as cartilage, loose cellular connective-tissue, and even epithelial structures. The suspicion is, therefore, aroused that rhabdomyomata are closely related to the mixed tumors or teratomata.

In form they appear as single or multiple, nodular or voluminous, flat or rounded, circumscribed or diffuse and even polypoid growths. They are usually soft and grayish on section, and markings produced by muscle bundles alternate with abundant connective-tissue stroma. Very cellular forms are more opaque, yellowish or reddish, soft and often diffuse.

The structure of rhabdomyoma presents chiefly a system of parallel bundles of intertwining strands of striped muscle-fibers, supported by adult or embryonal connective-tissue. The fibers may encircle blood-vessels or other structures but are more often diffuse. The microscopic appearance is usually that of a spindle-celled sarcoma containing more or less striated muscle-fibers. The cells are usually thin and much elongated and are rarely branched. Both long and cross striations may be pronounced or the cross striation may be present in a part of the cell only or be entirely missing in embryonal and spindle-shaped cells which still retain longitudinal fibrillation. Or the cells may resemble smooth muscle-cells. The ends of the fibers may be swollen, rounded, and contain multiple nuclei. In the more embryonal types they may lose their acidophile character and all resemblance to muscle-cells. Large areas of the tumor may contain no muscle-fiber at all while certain areas are richly supplied. Adeno-

matous elements are not rarely associated. The protoplasm is not only longitudinally striated but shows distinct cross and transverse striations. The rhabdomyomata usually have an abundant content of glycogen which is evidence of their embryonal character.

The nuclei follow a type of large vesicular chromatic bodies, single or multiple, which lie in a central area of granular cytoplasm. Or they may project from the cell border like nuclei of sarcolemma. A definite sarcolemma is wanting, but traces of such a structure with its nuclei have been seen in rare cases. The stroma is either loose adult connective, or embryonal, sarcomatous or myxosarcomatous, and the teratomatous contain bone, cartilage and various other tissue. Blood vessels are usually abundant and sometimes, as in a large polypoid vaginal tumor they are over-developed.

The course of rhabdomyoma is usually progressive and in the sarcomatous and teratoid forms it is rapid. The more adult types may become encapsulated or assume the polypoid forms, but the embryonal tumors infiltrate surrounding tissue, multiplying muscle-cells being often preceded by a zone of proliferating connective-tissue.

Degenerative changes, glycogenic, hyaline or amyloid may occur without interfering with the growth. The malignant tumors of the kidney and testis reach large dimensions and produce metastases and cachexia, but the metastases are usually derived from other elements of the tumor. These tumors are malignant in proportion as the sarcomatous element is predominant.

CLINICAL FORMS OF RHABDOMYOMA

The kidney is the commonest seat of tumors of this type. Here the tumors are large, rounded or irregular masses, more or less encapsulated.

In the urinary bladder polypoid rhabdomyomas have been described as polypoid masses hanging down into the bladder.

Rhabdomyoma uteri appears almost ex-

clusively as an element in the polypoid vagina, sarcoma of children and adults. This process affects the vagina of children and chiefly the cervix in adults. It may exist at birth and appear as a rather broad thickening submucosa which soon becomes polypoid. The symptoms are hemorrhage, fetid discharge, and protrusion of a polypoid tumor from the vagina, with dysuria, pain, fever, and cachexia. The vagina is eventually filled with ulcerating masses and there are bulky extensions into the pelvis, and occasionally to regional lymph-nodes, rarely to the skin or lung. The usual histology is that of a large spindle-shaped cell sarcoma with many blood and lymph-vessels, myxomatous tendencies, and areas of striated muscles.

In the testis rhabdomyoma occurs in the form of a nodular tumor as large as a walnut or a child's head. They may replace the entire organ or displace it to one side, or be found outside the tunica albuginea. In several cases the muscle-tissue was associated with epithelial structures, and one case was combined with carcinoma and sarcoma.

Congenital rhabdomyoma of the heart is a very characteristic condition. They occur as multiple sharply circumscribed areas or tumors, lying within the wall or projecting internally or externally. Ponfick pointed out that they are associated with diffuse sclerosis of the cerebral cortex and with disturbances of nutrition.

CASE REPORT

Mrs. M. B., age 66, patient of Dr. Louis Ritzhaupt of Guthrie. Personal history essentially negative. Usual diseases of childhood. Good recoveries. Patient has been ailing for past three years, but no definite diagnosis made. In March of this year patient had a rather severe hemorrhage from the urinary tract which so weakened her that she was in bed two or three weeks. The exact origin of this blood was not fixed although it was thought to come from the bladder. About five weeks ago patient began to feel badly again. At times was nauseated with occasional vomiting of bile-colored material. Has been in bed three weeks because of loss of strength and weight. Pain on urination which is quite severe at times. Has had nearly continuous hematuria. Pain over bladder and in region of the liver.

Physical examination: All was essentially negative except tenderness over bladder region and herpes on hips with few small shallow ulcers on tongue. Pelvic examination showed a hard mass in the anterior vaginal wall extending backward towards the cervix which was painful on pressure.

White blood count 18,200 with 85% polys, hemoglobin 60%, red blood count 3,000,000. Urine showed albumin 4 plus, a few red blood cells and pus cells on microscopic examination.

Cystoscopic examination showed a mass anterior to the trigone pushing the floor

of the bladder up from below. This mass extended up along the ureters on both sides and was thought to be outside the bladder wall. There was a small diverticulum on the left side which appeared to have an ulcer-like area about three-fourths of an inch in diameter along one edge. The surface of this, however, did not bleed when touched. The appearance of this mass from within the bladder and the feel of the mass from vaginal examination gave the doctor the impression that the condition was one of inflammatory origin.

The patient died very suddenly a few hours after the cystoscopic examination. A post-mortem examination showed all organs essentially normal except a moderate peri-splenitis of the spleen and a thickened floor of the bladder. There was no distinct tumor mass found. Microscopic examination of this thickened bladder wall showed it to be a rhabdomyoma, being composed of bundles of striated muscle-fibers with considerable interstitial fibrous tissue.

From Wesley Hospital Laboratory.

THE ADEQUACY OF TREATMENT IN CONTROL OF SYPHILIS

Udo J. Wile, Ann Arbor, Mich. (Journal A. M. A., Sept. 1, 1934), discusses the adequacy of modern methods of treatment in preventing the late sequelae of syphilis. Among all the advances in treatment, one thing stands out as an axiom unchanged through centuries; that the background, the understructure on which all treatment must be laid down, is the continuous use of a heavy metal. With all the kaleidoscopic changes that have occurred in the management of syphilis, the continuous use of mercury and more latterly bismuth has been the most constant factor, and round this the modern syphilologist, until something better appears, must build his attack. Looking back over the development of methods of treatment and changes in drugs used, it may safely be said that what is now set forth as adequate or as the best treatment today may well be discarded in the not distant future, as have older methods in favor of those in use today. The last word in the treatment of syphilis is still unspoken, and the ultimate solution and the successful search for a cure comparable to that which exists for certain other infections is something to be attained in the very remote future. The treatment of syphilis is still in a state of constant flux. The happy results achieved during the last three decades as a result of the pooled experience of observers in different parts of the country, and as a result of newer methods involving not only new drugs and new procedures but also greater refinement in early diagnosis, lead to the conviction that the next few decades will see, if not the last word, at least equally great progress in the treatment of already infected patients. The prevention of syphilis from the public health standpoint is a major problem deserving of the greatest effort on the part of the agencies concerned with the prevention of diseases.

THE JOURNAL

OF THE

Oklahoma State Medical Association

Issued Monthly at McAlester, Oklahoma, under
direction of the Council

VOL. XXVII NOVEMBER, 1934. No. 11

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McAlester, Oklahoma.

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Medical Arts Building, Tulsa, Okla.

Entered at the Post Office at Muskogee, Oklahoma,
as second-class mail matter July 28, 1912.

This is the official Journal of the Oklahoma State Medical Association. All communications should be addressed to The Journal of the Oklahoma State Medical Association, 203 Ainsworth Building, McAlester, Oklahoma. \$4.00 per year; 40c per copy.

The editorial department is not responsible for the opinions expressed in the original articles of contributors.

Reprints of original articles will be supplied at actual cost provided requests for them is attached to manuscripts or made in sufficient time before publication.

Failure to receive The Journal should call for immediate notification of the editor, 203 Ainsworth Building, McAlester, Oklahoma.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application.

PRINTED BY HOFFMAN-SPEED PRINTING CO., MUSKOGEE

EDITORIAL

OKLAHOMA CITY FALL CLINICAL SOCIETY

The meeting of the Oklahoma City Clinical Society recently held was in every way a most decided success. More than 600 were registered from Oklahoma and neighboring states. The faculty, as usual, was composed of the outstanding scientific authorities of this country, and brought to the medical profession of this section a great deal of valuable information. The post graduate courses conducted by the doctors of Oklahoma City were well attended and very interesting and it was again demonstrated that within our own membership is found some of the very best teaching talent.

The excellent fellowship which prevails at these meetings should not go unmentioned. This wonderful fraternal spirit is strengthened and developed by these meetings of the medical profession. The Journal wishes to congratulate the doctors of Oklahoma City upon this most excellent program, knowing that all who attended appreciate this opportunity and advise all who did not attend this fall to begin now to make arrangements to attend the next annual meeting.

APPENDICITIS MORTALITY

Much has been written recently in our leading medical and surgical journals relative to the mortality rate in appendicitis with appeal to the profession to use every available effort to lower this all too high rate. Definite action has been taken by the Pennsylvania State Medical Association to bring this matter to the attention of not only the surgeons but all members. A committee was appointed at their last annual meeting to draft definite plans to bring this information not only to the profession but to the laity. This committee requested that the Board of Trustees authorize the expenditure of \$100 or less for a page of warning stickers to be included in an issue of their State Journal. These stickers would be used by the profession to be placed upon statements and other correspondence going to their clientele. Four hundred thousand such stickers were sent to eight thousand physicians in the state. It was further suggested that the Councilor from each Council District be asked for time on their annual meeting program in order to present a paper on appendicitis mortality. That each member of the appendicitis committee prepare a short treatise on some phase of appendicitis to be presented before county medical societies, and that such county societies have a scientific program on appendicitis during the year.

It was also suggested that health talks be made to high school students and before civic clubs and that appropriate newspaper publicity be carried out.

It would appear that this is a step in the right direction and that some well formulated effort might well be outlined by the Oklahoma State Medical Association along this line. Such a move should, and I believe will, receive the hearty cooperation of the medical profession throughout the state and would result in lowering both the morbidity and mortality rates from this very prevalent and rather poorly treated disease.

SUMMARY OF COMPULSORY SICKNESS INSURANCE PLAN IN GERMANY, GREAT BRITAIN AND FRANCE

As can be seen from the heading, this report encompasses the entire life cycle of sickness insurance from its earliest inception, at least on a national scale, in Germany, since 1883; then goes over to that

of England which came into being in 1911; then that of France, one of the most recent plans put into execution, in 1930; and finally a plan that is only being contemplated, namely, the Michigan State Medical Society plan.

On studying the problem from this kind of perspective one covers the development of sickness insurance over the span of half a century. It gives one an opportunity to see the workings of each plan separately, or what is more important, that of the whole; hence, we believe, the value of this type of approach.

It is natural to expect that in such a series of developments each new plan would be an improvement over the others, that the newer plan would attempt to avoid the pitfalls and mistakes of the previous one; but, unfortunately, this is not altogether the true state of affairs. True, some of the newer plans have many excellent new features to overcome defects that cropped up in the earlier plans, yet some of them repeat the mistakes of the previous plans. A case in point is the Michigan plan, one not as yet put into practice, and still they make the cardinal mistake of expecting to put over such a comprehensive plan, offering an almost complete health service on a voluntary basis. It is one thing upon which all authorities on this subject agree, it is that the only successful way of putting over a National or State Health Insurance plan is to use the compulsive insurance principle. Simons and Sinai¹, both well known authorities on the subject and at least sympathetic to the cause, make the following statement regarding compulsion: "No voluntary system has ever succeeded in collecting sufficient premiums from the underpaid classes most in need of its services to give anything near adequate relief and sickness care."

It is not to be denied that there are countries that develop fairly large insurance schemes on a voluntary basis, notably among them, Denmark and Sweden; but in general it was found that the success of the scheme is greater the greater the operation of the compulsion principle in the plan.

It must be admitted that the early origin of health insurance is more or less due to a spontaneous demand on the part of people of poor means, and extends back a long time before any insurance plan, even that of Germany, came into operation.

In order to examine adequately the question of sickness insurance it is ne-

cessary to have a proper definition of what is meant by sickness insurance. The best definition we came across is that given in the Michigan State Society Report under "Conclusions and Recommendations." It is as follows: "Health Insurance," (these terms interchangeable—M. H. W.), "may be defined simply as a project to equalize the burden of costs arising through illness. It attempts to level this burden by attaching a definite meaning to average costs so that averages will constitute the exact costs to a family or individual, rather than conceal extremes of high or low costs."

1. In this definition, then, we find one of the most essential and valid reasons for insurance, namely, the distribution of the risk.

2. Another, and the most important reason is the heavy burden of so-called "catastrophic diseases." There is no doubt that real serious disease or prolonged illness constitutes an unbearable burden to any group, let alone the low-earning groups. This is a moral issue which cannot be sidestepped, and, we believe, must be met by the medical profession honestly and in a spirit of cooperation to the fullest extent. It must be admitted that the advances of social insurance are on solid ground in their claim that the individual physician is unable to cope with the problem, and collective effort on the part of all elements of the community is essential in meeting this problem.

However, when we have conceded these two premises—in reality but one premise—we have covered all the essential points, i. e., distribution of visits and "catastrophic illness." None of the other reasons advanced in favor of sickness insurance is, to our mind, valid, and there is very good reason to doubt even the sincerity of their advocates, although, if we choose to be charitable, we may say that they are the result of mere sentimentality, superficial thinking, and are a product of half-baked knowledge of the subject—of medical service—as it exists—at hand.

The other reasons advanced, to enumerate but a few, are:

1. That the greater part of the poorer classes is unable to get medical service. Some of the advocates of sickness insurance put the percentage as high as 67 per cent of the population (Rankin)². He does not say it in so many words, but since the upper earning limit advocated for compulsory insurable persons is \$1500, and according to Rankin's quoting of Leo Wol-

man there are 67 per cent of families whose annual income is under \$1450, the implication is quite clear that all these people should be insured. This, of course, is unthinkable. The statistics of hospitals and dispensaries in this country attest to the fact that this is not the case.

2. That the health of the people would be immeasurably improved because of everyone having, so to say, free access to medical service.

3. That preventive medicine will be greatly developed, checking the prevalency of such conditions as cardiac disease, nephritic disease, cancer, etc.

4. That the individual doctor falls far short in his ability to handle modern practice because he cannot avail himself of modern diagnostic methods, such as roentgenray, laboratory service, etc., and that socialized medicine will bring all these boons to suffering humanity.

In face of such ponderous argumentation, one cannot help but ask the question: Have all these things happened in those countries that have been blessed with such insurance?

(a) Is the health of the people any better?

(b) Is mortality lessened?

(c) Is preventive work advanced any more than it is in, say, these backward (talking from insurance standpoint only) United States, which have not as yet gathered unto themselves all these blessings?

(d) Does medical service given in the United States suffer by comparison with that in any of the countries which do have sickness insurance?

It is best to turn to the very people who urge this plan for testimony on these points. What do they say on these very subjects?

The International Labor Office Compulsory Sickness Insurance Report, according to even Simons and Sinai³ is a biased report, as can be seen from this quotation: "The International Labor Office is by no means an impartial observer. It has been instructed by a vote of an overwhelming majority of its constituent nations actively to propagandize for compulsory health insurance. (Report of the tenth session of the International Labor Conference, May, 1927). It is useless, therefore, to search in the publications of the Bureau for the defects of insurance." But even in this biased report it is admitted that the number of sickness days per

population has doubled in countries with compulsory insurance laws.

Again quoting from Simons and Sinai: "Contrary to all predictions the most startling fact about the vital statistics of insurance countries is the steady and fairly rapid rate of increase in the number of days the average person is sick annually, and the continuously increasing duration of such sickness. Various studies in the United States seem to show that the average recorded sickness per individual is from 7 to 9 days per year. It is nearly twice that amount among the insured population of Great Britain and Germany, having practically doubled in both countries since the installation of insurance." While it is being argued that this is more apparent than real, yet they at least must admit that there was no improvement under health insurance.

Similarly, when these authors speak of preventive medicine (page 9) they say:

"Naturally the best selling points of this service are stressed. These are the things which each fund has developed to show its superiority over its competitors. Regular medical service, being practically identical in all cases, is never so emphasized. Hospitals, convalescent homes, vacation camps, baths, cures, clinics, and any preventive work that may be done are described in glowing terms, and usually illustrated.

"This is perhaps one of the reasons for a very general acceptance for the claim that provisions for general health care are more efficient under insurance than in the United States. German physicians and insurance officials repeatedly stated as an accepted and undisputed fact that everything done by American Health Departments was done as a matter of routine, in Germany through insurance and general health administration. Only a most casual inspection was necessary to show that in many such fundamental matters as care of milk supply, supervision of the display and sale of food, etc., conditions existed almost everywhere that would be tolerated only in the most backward American localities."

The same authorities, Simon and Sinai³, make a most remarkable admission when they state (page 16) that: "Social insurance is always a result of low wages," and again in the same paragraph: "That the whole social insurance problem is, at bottom, one of low wages must be recognized as a basic fact. Adequate wages would immediately shift the responsibility of

meeting such emergencies from society to individual." Later in the same discussion the same author says: "In spite of the name and all that may be said to the contrary, the dominant motive in the establishment of every system of health or sickness insurance is the *Relief of Poverty, not the Preservation of Public Health.*" (To be continued in the December Journal).

REFERENCES

1. Simons, A. M., and Sinai, Nathan: The Way of Health Insurance. The University of Chicago Press.
2. Rankin, S. W., Am. J. Pub. Health, 19:359-65, April, 1929.
3. Simons and Sinai, loc. cit. p. 12.
4. Simons and Sinai, loc. cit. p. 157

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Editorial Notes—Personal and General

WE ARE pleased to note the appointment of Dr. John L. Day, as Superintendent of the Hospital at Supply, to succeed the late Dr. J. W. McClendon. The State is fortunate indeed to have the services of so competent a man, having shown his outstanding ability while connected with the State Institution at Norman. We wish to congratulate the Board of Affairs on their excellent selection and predict a most competent administration.

—O—

DR. D. W. GRIFFIN, Norman, completed his 35th year of service as superintendent of the Central State Hospital October 8th, 1934. Coming to Norman in 1899 Dr. Griffin became assistant physician at the then privately owned institution. In 1910 he became superintendent of the hospital, a position he retained after the State bought the institution in 1915.

Dr. Griffin is believed to be the oldest state official from point of service and has seen more years of medical service with one institution than any other physician in the southwest. He is professor of mental and nervous diseases in the University School of Medicine and is one of the foremost psychiatrists in the southwest. He is an honorary member of the Oklahoma Academy of Medicine.

Dr. Griffin was born in Caldwell county, N. C., in 1873. He took his academic training in Chapel Hill College, Va., and graduated from the University School of Medicine, Richmond, Va.

Members of the hospital staff and a number of old friends gathered at his home October 8th for an informal surprise reception.

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DR. ELLIS LAMB, Clinton, is reported improving after an operation for a sinus condition.

DR. W. F. HAYS, Claremore, who has been ill for the past few weeks, is reported improved.

DR. W. PAT FITE, Muskogee, has been named as medical examiner for the federal air commerce bureau.

DR. J. HUTCHINGS WHITE, Muskogee, attended the Southeastern Clinical Society, Kansas City, in September.

DR. G. E. JOHNSON, Ardmore, spent several weeks in October at the Mayo Clinic, taking post-graduate work.

DR. P. H. ANDERSON, Anadarko, is reported suffering from injuries received when he was thrown from his horse.

DR. W. ALBERT COOK, Tulsa, attended the meeting of the American College of Surgeons held in Boston, in October.

DR. and MRS. C. M. HODGSON, Kingfisher, have returned from New York where Dr. Hodgson has been doing post-graduate work.

DR. E. M. GULLATT, Ada, is spending a month at Washington University, taking a post-graduate course in children's diseases and orthopedics.

DR. J. R. HINSHAW, Clinton, spent several weeks in Rochester at the Mayo Clinic in October, doing special work in surgery and medicine.

DRS. EDMOND S. FERGUSON and WILLIAM L. BONHAM, Oklahoma City, attended a meeting of the American College of Surgeons, held in Boston.

DOCTORS J. A. MOFFITT AND GEORGE S. MECHLING, Oklahoma City, attended a meeting of the Congress of Anesthetists in Boston in October.

DR. A. A. WALKER, Wewoka, spoke at a cancer clinic held in Seminole in October. Drs. L. J. Starry, E. S. Lain and Wendell Long, all of Oklahoma City, were also speakers.

DRS. E. GORDON FERGUSON and L. CHESTER McHENRY, and J. C. McHENRY, Oklahoma City, have returned from the meeting of the American Academy of Ophthalmology and Otolaryngology, held in Chicago.

DR. BRUNEL D. FARIS, who has spent the past six months doing post graduate work in obstetrics, at Northwestern University and Wesley Memorial Hospital, Chicago, has returned to Oklahoma City and is located at 1217 Medical Arts Building.

—O—

News of the County Medical Societies

WOODWARD COUNTY MEDICAL SOCIETY held their regular bi-monthly meeting at the Baker hotel, Woodward, in October, with a dinner at which about forty physicians and dentists and their wives were entertained. Dr. W. C. Tisdal, read a paper on "Pre-Natal Care," after which there was a round table discussion.

At their next meeting, December 11th, at Woodward, there will be motion pictures on "Mid-Wifery."

DR. P. M. McNEIL, Oklahoma City, discussed "Treatment of Pneumonia and Its Complications," at a special meeting of the Cleveland County Medical Society held at the Central State Hospital, Norman, October 18th.

DR. R. Q. GOODWIN, Oklahoma City, spoke on "Pulmonary or Lung Abscesses," with lantern slide illustrations, at a meeting of the Pittsburg County Medical Society, October 18th.

DOCTOR JOHN WATSON CREWS

Dr. J. W. Crews, age 70, prominent physician of Atwood, died October 4th, following a brief illness from pneumonia. He is survived by his widow, seven daughters and a son.

Dr. Crews was born August 18, 1865, in Murfreesboro, Tennessee; graduated from the Hermitage Academy in Christiana, Tennessee in 1889. Dr. Crews practiced medicine in Foster-ville, Tennessee, until coming to Oklahoma in 1895, and practiced in Pontotoc, Pittsburg, Atoka and Hughes counties.

Interment at Atwood.

DOCTOR JAMES WESLEY McCLENDON

Dr. J. W. McClendon, superintendent of the Western Oklahoma Hospital at Supply, passed away at 4:15 o'clock Wednesday morning, October 3rd, at his home, 400 East Creek. Death was very unexpected.

He was born in Louisiana in 1868, from which state he moved to Texas, before locating in Indian Territory. Dr. McClendon retired from active practice to engage in various commercial enterprises, which occupied his time for about twenty years; reentered practice at Earlsboro in 1929 and remained at this location until he was appointed by Governor Murray as superintendent at Supply.

Interment at Atoka.

DOCTOR NEWTON HARVEY LINDSEY

It is with deep regret that the Journal announces the death of Dr. Newton Harvey Lindsey of Pauls Valley, who for many years has been an active and valued member of the Oklahoma State Medical Association.

Dr. Lindsey was born July 13, 1870, died October 24, 1934.

During his residence at Pauls Valley he has been actively identified with the Garvin County Medical Society, having been president and at various times a member of the House of Delegates of the Oklahoma State Medical Association—having served on various committees of this organization. For many years Dr. Lindsey has been engaged in the practice of surgery, giving the practice his undivided attention.

Dr. Lindsey held membership in the Garvin County Medical Society, Oklahoma State Medical Society, American Medical Association, and a fellow of the American College of Surgeons.

Funeral services were held at the Presbyterian Church, Pauls Valley, Thursday, October 25th, with his pastor, Reversnd W. T. Reynolds, officiating.

DR. W. J. WALLACE

In dark seas where the whirlpool rages,
Stands the eternal Rock of Ages.

Then Tiens ta Foi through the bitter strife!
O cling to the cross—through death to life!

It is with sorrow and grief that we record the passing of a man whose life was an inspiration to every student of medicine graduating from the Oklahoma University for the past twenty years. Transplanting himself from the heart of his native Cumberland Mountains to the expansive plains of Oklahoma, forcing himself upward from a condition of poverty and obscurity into a life of splendid professional and financial success, leaving behind him everywhere a host of warm personal friends, this man came and labored among us and passed on to face his Maker with an achievement to his credit which few men have equaled.

Dr. W. J. Wallace was born in 1874 on a farm near a village in Mississippi. He finished the local schools at that point and entered business, being part proprietor of a small store at Kosciusko, Mississippi. Here he had as a partner, Mr. Hugh Johnson, one of the shrewdest business men who has ever guided the destinies of finance in the state of Oklahoma. After a year or so of this, Dr. Wallace sold his interest for sufficient profit to enable him to matriculate as a medical student and continue until graduation in the University of the South at Sewanee, Tennessee. He was a good student and finished with honors, following which he took a year's internship in the Grady Hospital in Atlanta and came west. Here he located in Chandler, Oklahoma, where he conducted a large general practice until 1906, at which time he stopped, went to Tulane University and from there to New York City, where he received training in the specialty of urology. Before resuming practice he spent some time in European study and finally opened an office in 1911 in Oklahoma City, where he practiced until his death.

Dr. Wallace was honored by his profession and was Professor of Urology in the University of Oklahoma Medical Department. He was a past president of the Oklahoma County Medical Society and of the Southwestern Branch of the American Urological Society. He was a very faithful member of the various medical bodies related to his work.

His personality was such as to attract and hold the warm friendship of men in all walks of life. His business sagacity was uncanny and resulted in the accumulation of a considerable fortune. He was an extremely busy man, who played little, but who threw his heart and soul into professional duties, taking time out only for an occasional trip out of town to a medical meeting, from which he hurried back to his patients.

Dr. Wallace was a clean, Christian man, who faced death secure in the faith that his journey across the valley of Death would be attended by the loving care of a personal Savior. Auf Wiedersehen, our friend and leader.

(As presented by Dr. Basil A. Hayes, Oklahoma County Medical Society).

ABSTRACTS « REVIEWS « COMMENTS AND CORRESPONDENCE

INTERNAL MEDICINE

Edited by L. J. Moorman, M.D., 1200 N. Walker,
er, Oklahoma City; C. E. Bradley, M.D.,
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By C. E. BRADLEY, M.D.

Cough—Some Problems in Therapy. Oscar W. Bethesda, M.D., Professor Clinical Medicine, Tulane. "International Medical Digest," September, 1934, Page 178.

Cough is a symptom and not a disease. It should not always be suppressed as it may be nature's method of removing secretions that would be a disadvantage to the patient. It may be more desirable to modify the cough than to suppress it entirely.

A general examination, including laboratory work and if necessary x-ray studies together with complete and careful family and personal histories, should be made in all cases.

The treatment is best directed against the causative factor. Cabot found the most frequent cause of cough was heart disease, next tuberculosis, and third tonsillitis. Allergic coughs which may or may not be associated with hay fever and asthma should be treated by elimination of the causative factor. Bronchiectasis and chronic bronchitis are responsible for persistent and disturbing types of coughs. Autogenous vaccine, lipiodal by instillation, and one of the iodides by mouth help in these conditions.

The common cold is responsible for a large percentage of coughs. Here direct therapy is indicated. Measures to build up the resistance of the patient, such as cod liver oil, general care, and vaccines should be instituted.

Sinusitis may cause coughs and should be treated locally. Nervous instability is often a cause of persistent cough. Here the bromides are of value.

Quiet in the cumbent position will reduce coughing to one-half. Restriction of exercise, avoidance of fatigue and dyspnoea are of great value. Good fresh air is of great help, but drafts should be avoided and the body should not be allowed to be chilled. Dietetic measures include warm drinks and food and lots of milk and fruit juices. Foods rich in vitamin A have their value. Inhalations of benzoin are often helpful. Sprays are frequently employed with local help. Expectorants, though of value, often cause impairment of the appetite and digestion with the production of nausea.

Sollmann classifies the expectorants as follows:

- (a) Against dry congestion: syrup ipecac; tartar emetic.
- (b) Against thick secretion: ammonium chloride; potassium iodide.
- (c) Against excessive thin secretions: terpin hydrate.
- (d) Against imitation: codeine, and alkaline gargles.

Conclusions

1. As cough is a symptom the etiological factor should be sought.
2. Attention to the cause is the most important consideration in therapy.
3. It is better to modify a cough than to suppress.
4. In selecting an expectorant, physiology, pathology, and pharmacology must all be drawn upon for assistance.

Some Aspects of Tuberculosis Meningitis and the Possibility of Its Prevention. Prof. Dr. Arvid Walgren, Gothenburg, Sweden. "The Journal of Pediatrics, September, 1934, Vol. V, No. 3, Pages 219-298.

Without a doubt, tuberculosis meningitis is the most fatal of all children's diseases. Since it is a common one, against which we are entirely powerless, our only hope is in the development of preventive measures.

An analysis of 166 autopsied cases and 39 x-rayed cases shows that with very few exceptions tuberculosis meningitis develops as a complication to fresh primary tuberculosis, and that as soon as encapsulation and calcification begin, the risk of meningitis is greatly diminished.

Statistics compiled by a Hungarian physician, Orocz, and the author show that the child runs the greatest risk of getting meningitis between the fourth and eighth week after the appearance of tuberculin sensitivity. After three months have passed, the danger of meningitis is considerably less.

Of course the first problem is the early diagnosis of primary tuberculosis. This is difficult because of the atypical symptoms of the disease. The most consistent symptom is the entirely uncharacteristic fever, which is no different from that caused by commonplace infections. The only possible way to avoid overlooking primary tuberculosis is to make tuberculin tests in all acute febrile conditions, especially those not clearly diagnosable. X-ray examination should follow all positive tuberculin tests.

We prescribe sanatorium treatment. The children should be kept in bed as long as the fever persists and as long as the blood sedimentation rate is accelerated. Then they may be allowed a gradually increasing length of time up and exercise in the outdoors.

This treatment is not too rigorous when we remember that tuberculosis meningitis occurs only in those children who have not received treatment for primary tuberculosis.

It is usually impossible to determine from the history when the child developed primary tuberculosis except in one condition, the appearance of erythema. This syndrome is usually of tubercular origin and develops at the same time as tuberculin sensitivity. Of 429 children treated as outlined above for erythema nodosum and primary tuberculosis only three contracted meningitis.

There is greater danger of contracting meningitis

in the early spring and in August, while the younger the child the greater the risk of meningitis. The age curve from the Gothenburg hospital for the last six years shows that meningitis really can be to a certain extent prevented by rational anti-infection prophylaxis. Hence it is up to us to protect children, especially those under three years of age, during the first four months of the year against infection.

A Statistical Analysis of Whooping Cough Cases.

John A. Toomey, M.D., Cleveland, Ohio. "The Journal of Pediatrics," September, 1934, Vol. V, No. 3, Pages 322-329.

An analysis of 112 cases of whooping cough in the contagious department of the Cleveland City Hospital from 1921-1932, inclusive, showed that 88% of the cases were children under six years of age. Of the 14.9% that died, 86.7% were children under three years of age. Fifty-six of the seventy-nine deaths in children under one year of age were caused by bronchopneumonia which shows that the disease is particularly dangerous in children in the first year of life. A few more females than males were observed. The highest death rate was for the month of July when it was 30.1%.

The death rate of the Cleveland Hospital was less than that of Glasgow Hospital, Edinburgh City Hospital, and Berlin. It was 1.9% more than that of the department of pediatrics in the Western Reserve University City Hospital; a great deal more than that of Geneva, Lausanne, and slightly more than that of Paris.

In Cleveland there is a decided increase in the number of cases from the third to the eighth month of the year. In Massachusetts, New York, Ohio, Minnesota, and Wisconsin the greatest mortality occurs in February, March, April and May, with a rebound in August; while in Alabama, Florida, Louisiana, and Georgia it rises slowly in March and reaches a peak in July.

Statistics show that 35-50% of the deaths from whooping cough occur in children during the first two years of life. The author says, "Even though there is a high mortality rate in infancy it has been my clinical experience as well as that of others that well-fed, healthy, and sturdy infants in good surroundings actually may have few or no symptoms. Social conditions, such as poverty and inattention, create predisposing factors whose effect on the patient's general physical well-being may militate against his recovery. This is well illustrated by the fact that 35 out of 92 rachitic children and 10 out of 14 spasmophilic children died, accounting for 45 of the 166 deaths in our series of whooping cough cases." The severity of bronchopneumonia, which accounted for 122 of 250 cases, as a complication must not be overlooked.

The author reports practically no sequelae following the recovery of the cases in Cleveland, although two cases did die of pulmonary tuberculosis six months after they had pertussis; he also believes that asthma occurs as an aftermath more often than this series of cases would indicate.

The Diagnosis and Treatment of Pulmonary Abscess in Children.

David T. Smith, M.D., Durham, North Carolina. "J.A.M.A.," September 29, 1934, Vol. CI, No. 13, Page 971.

The incidence of pulmonary abscess in children has been greatly underestimated by available literature. Multiple embolic abscesses occurring with septicemia will not be considered here because they are believed to be an integral part of the septic disease.

An analysis of 45 cases of pulmonary abscess for predisposing causes showed that half of the cases followed pneumonia, a fourth followed tonsillectomy, one followed aspiration of a foreign body, one followed exposure, and one followed the aspiration of a membrane in a case of Vincent's angina.

The infecting material may reach the lung directly by a penetrating wound, it may drain through the lymphatics, it may enter through the blood stream as an embolus, or it may be aspirated. In the cases studied there was no evidence that the material entered by either of the first two routes. Cutler and his co-workers believe that most if not all abscesses following operation are embolic in origin; and it cannot be denied that a large per cent follow aspiration, sometimes while the patient is under an anesthetic. It has been demonstrated that 76-78% of the patients have blood below the vocal cords after tonsillectomy.

As in adults, pulmonary abscesses in children may be classified as: (1) bacterial abscess; (2) fusospirochetal abscess; (3) fungous abscess. There has been much discussion regarding the first two terms. Some contend that abscess should be reserved for the bacterial type, and that the second should be called fusospirochetal gangrene. So long as the identity of each is understood it really makes no difference.

(1) **Bacterial Abscess:** Although any bacterium which gains access to the lung may cause inflammation, only those containing proteolytic or necrotizing enzymes such as streptococci, staphylococci, Friedlander's bacillus, *B. pyocyaneus*, influenza bacillus and members of the gas gangrene group of bacilli are capable of initiating abscess. The author believes that when complete bacteriological studies have been made in sufficient number of cases that at least 50% of the pulmonary abscesses in children will be due to staphylococci.

(2) **Fusospirochetal Abscess:** Since 1867 fusiform bacilli and spirochetes have been associated with certain pulmonary abscesses. In recent years experiments have shown consistently that fusiformirochetal material from sputum or tonsils of the patient will produce pulmonary abscess in experimental animals. Spirilli have been shown to be the important factor in the symbiosis since transmission from animal to animal is impossible when they are absent.

(3) **Mycotic Abscess:** Although few children with mycotic abscess have been observed, sporothrix and actinomycosis have been the etiological agents in those studied.

Diagnosis: Prognosis depends largely upon an early diagnosis and prompt specific treatment against the etiological agent. This is often difficult. A history of tonsillectomy or aspiration of a foreign body should put the physician on his guard for fusospirochetal abscess. A child with the clinical signs of pneumonia and a gingivitis or Vincent's of the tonsils may have fusospirochetal abscess of the lungs.

Since the history, physical signs, and x-ray may be identical in cases of bacterial abscess, a bacteriological study of pulmonary secretions is essential. Sputum is difficult to get in children, so laryngeal swabbings, bronchoscopic drainage, and pleural tapplings may be necessary. Exploration of the lung with a needle is dangerous as it may produce fatal empyema.

Treatment: The general supportive measures: rest, fluids, high-vitamin diet and postural drainage may be safely and beneficially applied in all cases of pulmonary abscess.

Polyvalent serum, antitoxins, and autogenous vaccines are beneficial in the treatment of abscesses

caused by organisms of the gas-gangrene group, staphylococci, and other bacteria, respectively. Postural drainage, and bronchoscopic drainage is indicated in the subacute stage. In chronic stage (duration of three months) open operation and drainage should be resorted to.

Arsenicals should be started within the first two weeks in fusospirochetal type of pulmonary abscess if the best results are to be obtained.

Potassium iodine in gradually increasing doses should be used in the treatment of the mycotic type of abscess, and vaccine therapy may be beneficial as a supplementary treatment.

By HUGH JETER, M.D.

The Specificity of the Test for Alcohol in Body Fluids. H. A. Heise, Uniontown Hospital, Uniontown, Pennsylvania. *American Journal of Clinical Pathology*, Vol. IV, No. 11, Page 182.

The author refers to the work of Nicloux, Nowicka, Widmark, Southgate and Carter, Bogen, McNally and Embree and agrees with them in that the presence of alcohol furnishes the only constant finding in all cases of alcoholic intoxication. He also confirms the fact that the degree of intoxication fairly closely parallels the per cent of alcohol in the blood or urine regardless of tolerance, age, weight or food consumption.

It is pointed out that such a chemical examination is valuable in cases of coma, as a matter of differential diagnosis, as well as in cases of accidents and those of medico legal importance. A case was reported to illustrate, in which the diagnosis was uncertain. The urine examined revealed 0.42 per cent alcohol, the spinal fluid 0.38 per cent and consequent results proved alcoholism to be responsible for the alarming symptoms.

The technic of the test is given. It is said to be accurate within 0.01 per cent. Specimens can be preserved satisfactorily. Benzoic acid is a good preservative for urine and sodium fluoride for blood. The author indicates that alcoholism plays a greater factor in auto accidents than statistics indicate.

The Medicolegal Necropsy. *American Journal of Clinical Pathology*, January, 1934, Vol. IV, No. 1.

This entire number of the Journal is devoted to the subject of medicolegal necropsy, 167 pages in all, in the form of a symposium, as follows: Introduction, Frederick E. Sandern, Chairman, Committee on Necropsies, American Society of Clinical Pathologists.

In this brief introduction generalizations are made in which the importance, history and problems are mentioned. The points of history are extremely interesting.

The Medicolegal System of the United States, Oscar T. Shultz, Director of Laboratories, St. Francis Hospital, Evanston, Illinois.

In this the author discusses the application of medicine to law, the coroner, the coroner's necropsy, the coroner's inquest; causes of the poor functioning of the coroner's office; is the coroner's office necessary; reform of the coroner's office; permission for necropsy; removal of organs at necropsy; and disposition of parts removed from the human body. This is an authoritative discussion of pertinent facts such

as are of tremendous importance to every practicing physician, not only as a physician but as a citizen.

The Medicolegal Necropsy, Charles Norris, Chief Medical Examiner, New York City.

This is a general discussion of medicolegal necropsy emphasizing its importance in many types of instances. Many important suggestions are included. He closes with the following: "A well planned campaign to overcome the prejudice of the public to examination of the dead is necessary. The medical profession is somewhat responsible for the antagonistic attitude of the public. The contrast between our country and the central European countries is noticeable in this regard. To illustrate, all the professors who taught me during my post-graduate studies in Vienna were thoroughly examined after death."

Performing the Medicolegal Necropsy, A. V. St. George, Assistant Director of Laboratories, Dept. of Hospitals, City of New York.

This author classifies necropsies as follows:

1. Crimes of violence (shooting, strangulation, stabbing, infanticide, etc.).
2. Sex crimes (rape, etc.).
3. Poisonings (including homicidal, accidental, occupational).
4. Traumatic accidents (automobile injuries, falls, etc.).
5. Still-births, malformations, birth injuries.
6. Sudden (accidental) deaths.

An abundance of useful technical knowledge is presented.

Pathological Anatomy of Death by Drowning, Edward L. Miloslavich. From the Institute of Legal Medicine, Royal University, Zagreb, Yugoslavia.

Fundamental phenomena and points in differential diagnosis are discussed.

Toxicology in the Medicolegal Necropsy, Alexander O. Gettler, Toxicologist, Chief Medical Examiner's Office, New York City.

In this portion of the symposium, poison is defined; leads and clues are itemized; points in the post-mortem examination are stressed; necropsy material best adapted for analysis is discussed and technical points connected with the toxicological examinations are outlined. In addition, five interesting cases are briefly presented. "Alcohol the Cause of Accidents" is discussed. From the examination of 6,000 brains as well as spinal fluid this author concludes that contents above 0.25 per cent indicates intoxication.

Medical Examiners' Findings in Deaths From Shooting, Stabbing, Cutting and Asphyxia. Harrison S. Martland, Chief Medical Examiner for Essex County (Newark), New Jersey, and Associate Professor of Forensic Medicine, New York University, University and Bellevue Hospital Medical College, New York City.

This portion of the symposium consists of almost 100 pages of copiously illustrated, beautifully and clearly presented, facts covering the subject, in a masterful manner. Many valuable photographs and case records are presented. Statistics and other valuable material are recorded.

EYE, EAR, NOSE and THROAT

Edited by Marvin D. Henley, M.D.
911 Medical Arts Bldg., Tulsa

Visual Field Defects in Pregnancy. C. E. Finlay, M.D., Havana, Cuba. *Archives of Ophthalmology*, August, 1934.

This is a continuation of research work first reported in 1922. At that time findings of the visual fields of thirty-one cases of pregnancy were related. One hundred and eight additional cases are now reported with charts, illustrations, etc. A bitemporal contraction of the visual fields intensified in one or more quadrants was the finding in the majority of the cases. This is almost a constant occurrence in an uncomplicated pregnancy.

Some possible causes suggested for this phenomena are: hypophyseal enlargement of pregnancy, toxic influence due to endocrine disturbance or some other disorder, to a general reduction of retinal vitality due to endocrine insufficiency, to suggested influences or to other causes independent of the hypophyseal hypertrophy, which are not considered capable of producing this defect by pure mechanical action.

A Ferec-Rand perimeter with an illumination of seven candle power was used for taking the visual fields. Patients were selected who did not have any constitutional disorders or otherwise active eye complications. The period of parturition chosen was during the last three months, except one. In addition some were examined before the above mentioned period and some were checked after delivery. The tests were conducted in a painstaking manner, care being exercised not to fatigue the patient.

In pregnancy there is a normal enlargement of the hypophysis and a subsequent pressure of the chiasm. The hypophysis at this time is regularly from two to three times its normal size. This even when not directly compressing the chiasm, may produce vascular changes of the nature of venous or arterial engorgement or anemia in and around the chiasm. Then a secondary edema and secondary changes in the nerve tissues may affect their conductivity. Twenty-six cases were re-examined after delivery and twenty cases showed normal or beginning to return to normal. In the others there is the possibility of a hypophyseal growth which was stimulated by pregnancy.

The ninth month of pregnancy showed the greatest increase in the phenomena. An increase in the frequency was noticed after the second pregnancy. Colored and Latin women showed a preponderance in frequency over the Nordics. It is significant that the defect was not a concentric contraction but in all cases studied was a bitemporal defect. This would apparently rule out the theory that toxicity has to do in producing the defect in the visual fields. Age of the patient evidently had no influence on the course of the phenomena.

Only one death occurred in this series of cases which were examined and it was impossible to obtain an autopsy of the head.

The Etiologic Factors in the Formation of Cholesteatoma. Kenneth M. Day, M.D., Pittsburgh. *Annals of Otolaryngology, Rhinology and Laryngology*, September, 1934.

Fifty consecutive cases are reported with extensive charts and a bibliography. It is a moot question what part moisture plays, but the author believes that this

is the factor of greatest importance in the growth and development of cholesteatoma.

The average patient considers the discomfort from the presence of cholesteatoma of minor importance and does not agree readily to the introduction of major surgery to effect a cure. Therefore he must be treated conservatively, being continually watched for signs or symptoms of labyrinthine or intracranial extension. The routine conservative treatment of this condition is by the use of some solution free of water. The conservative treatment as outlined is an effort to assist nature's attempts at epidermatization. The growth of epidermis is inhibited by moisture and the waste products interfere with drainage. Instrumentation and lavage maintain a free opening for the escape and drainage of waste products and the absence of moisture promotes the growth of epidermis. Many times the treatment is rendered futile by the preliminary use of hydrogen peroxide or some other similar agent.

If the signs and symptoms are confined to the middle ear, then conservative treatment should bring satisfactory results, otherwise surgery should be resorted to and the affected area thoroughly exenterated. In order to have a cure the epidermis must entirely replace the mucosa in the affected cavities. During the course of this there is a continuous desquamation. Other things besides moisture which may cause desquamation are inflammatory reaction to infection, chemical irritation from the fluids, the biologic reaction of two foreign types of epithelium coming together and mechanical pressure from the mass of cholesteatoma.

The dry cholesteatoma resulting after complete epidermatization may continue to be present in a quiescent stage, giving no signs or symptoms, for years until due to the introduction of water while swimming or bathing it becomes active. Because of the increased amount of tubal secretion in young children conservative treatment rarely produces the end result which is so much desired, i. e., a dry ear. It is universally agreed that a chronic otitic suppuration complicated with cholesteatoma is an indication for radical surgery. Prompt recognition of the condition combined with early and suitable conservative treatment will many times produce a dry ear and relief of symptoms without surgery. It is an important point that even after the dry ear is obtained that the patient report at regular intervals for examination.

In the fifty consecutive cases reported, thirty-seven were treated conservatively with a resulting thirty-one dry ears (no ear was considered cured until it had remained dry at least six months and the washings from the attic returned clear). Six cases, three in young children, were failures due, the author believes, to the presence of a wet, secreting tube.

Nasal Flora and Reaction of the Nasal Mucus. A. R. Tweedie, Nottingham. *The Journal of Laryngology and Otology*, September, 1934.

Tweedie submits a preliminary report on a colorimetric research of the nasal flora and reaction of the nasal mucus, based on the results found in two hundred cases. For the past fifteen years he has been doing research in this field but it was only about two years ago that his present method was elaborated for the ordinary routine examination. Great care is necessary to be sure that the material used is absolutely neutral in reaction. The author states that there may be fallacies in his technique but no more than are made daily in determining the reaction of urine. He summarizes his results as follows:

1. The normal nose has a reaction varying from

about pH 6.8 to 7.4 and, in the majority of cases, has a non-culturable bacterial content.

2. Cases of acute rhinitis up to three days old, vary in reaction from neutral to alkaline, but show no culturable content.

3. Cases of acute rhinitis, after this period, have an alkaline reaction and mostly show a culturable content with, generally, a more pronounced growth on an alkaline than a neutral medium.

4. In cases of recovered acute rhinitis, the reaction again becomes neutral and the chances of culturable content begin to diminish.

5. In cases of chronic rhinitis, without other general symptoms, the reaction is usually neutral and the mucus more often sterile than not.

6. In cases of chronic rhinitis, associated with sinusitis and polypi formation, the reaction may be either neutral or alkaline and there is a culturable content in about half the cases, and on a medium with a reaction usually corresponding to that of the mucus.

7. In "clean" cases of post-operative or traumatic rhinitis, the reaction is normal and there is no culturable content.

8. A culturable bacterial content may be restricted to one side of the nose. The organisms found have been haemolytic and non-haemolytic streptococci and, occasionally, staphylococcus aureus.

Conclusions drawn by the author are:

1. The mucus of the normal nose can control pathogenic bacteria.

2. It is not until the reaction of the mucus becomes disturbed that the pathogenic bacteria can obtain a footing.

3. On the other hand, there would appear to be certain noses which can be classed as "carriers".

4. Whatever may be the initial cause of the "common cold" it would appear to induce an abnormal alkaline nasal mucus.

5. I think there is also evidence that, with the maintenance of a healthy nose, inflammatory otitis media should be prevented.

6. In culturing, the content of the nose should be tested on both a neutral and an alkaline medium.

Modern Surgery in Diphtheria. Clarence W. Bailey, M.D., Rocky Mount, N. C. Archives of Otolaryngology, August, 1934.

Five thousand nine hundred and ninety-three cases of diphtheria from the Philadelphia Hospital for Contagious Diseases and the Park View Hospital, Rocky Mount, N. C., are reviewed in this article. The author states that in his experience he has never seen a death result from diphtheria in a person who has had his tonsils and adenoids removed and who had been immunized and shown a negative Schick test. Ruling out those who were practically moribund on admission the mortality of the Philadelphia group was 5.53%.

The treatment of diphtheria is divided into three stages by the author, viz.: (a) Combating the acute intoxication; (b) relieving, in about one-sixth of the cases, the mechanical obstruction to the respiratory tract, whether it is pharyngeal, laryngeal, tracheal or bronchial; (c) relieving the patient of infection and from isolation after recovery from the acute disease. The last two stages are discussed in this article. The armamentarium which the author considers adequate

is listed. An assistant and nurses who have had special training in dealing with this disease are necessary.

The mortality was 100% in patients with an obstruction of the lower part of the pharynx which necessitated a tracheotomy. Toxemia and myocarditis are given as the cause of death. Removal of the membrane from the larynx and trachea does not leave a bleeding surface as it does in the tonsillar region. A bronchoscope is not used here but a laryngoscope with an aspirating tube. If necessary the procedure is repeated several times. If sufficient airway cannot be maintained in this manner then after thoroughly cleansing the larynx and trachea, an intubation is done. If the tube should be inserted and the membrane pushed downward blocking the tube during a spasm of coughing, emergency treatment will probably be required. Coughing up the tube, traumatization of the laryngeal mucosa, cicatricial stenosis and tubal ulceration and secondary infections are some of the other untoward sequelae mentioned.

The author prefers the indirect method of intubation because to him it is much quicker and simpler. He leaves a banjo wire fastened through the hole of the tube with the ends sticking up to the roof of the mouth so that the tube cannot be expelled with the tongue. The child's arms are splinted so that he cannot remove the tube with his hands. Five days is the average time the tube is left in situ. Diphtheritic bronchopneumonia (diphtheria of the lower alveoli of the lungs), he has always found fatal, death being due to suffocation. According to the author tracheotomies are indicated in only two conditions: the pharyngeal obstruction caused by excessive cervical edema and "chronic tube cases". Another possible indication for a tracheotomy conceded is that of a patient who is far out in the country deprived of trained nurses.

Post diphtheritic lung abscesses were observed in only two patients of the entire series. Management of chronic tube cases and diphtheria carriers is discussed. The article closes with a plea for immunization.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D.
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A New Treatment for Delayed Union or Non-union in Fractures. Ralph M. Carter, Jr. Bone & Joint Surg., Vol. XVI No. 4, 1934.

The treatment consists essentially of boring holes, obliquely, through the fragment ends so that bone regeneration will be stimulated. The method is along the lines first recommended by Beck and Kiel and Bohler of Austria. He uses a hand drill holder and a wire drill consisting of a smooth, sharpened wire, rather than a spiral drill which has a tendency to draw the bone pulp out of the wound. He also uses a holder for stabilizing the drill. He prefers the hand drill to the motor driven drill because of safety.

Under nitrous-oxide-oxygen anesthesia, using strict aseptic technique, the point of the drill is slipped through the hole in the small stabilizing instrument, and is then pushed through the skin at a point either distal or proximal to the fracture line, until it comes into contact with the bone. By pressing the stabilizer firmly against the skin, the assistant steadies the point of the drill, which is now made to penetrate the bone in a diagonal direction, so as to cross the fracture line and to enter the other fragment. The drill is

then withdrawn to the periphery of the bone, but not outside the skin, and the drilling is repeated in a slightly different direction. Six to eight or more holes may be drilled in a small bone and ten to twelve holes in a larger bone. The drill is withdrawn and the same procedure is repeated through a skin puncture on the opposite side of the fracture line.

An unpadded plaster cast is afterward applied. X-ray made four to six weeks later will usually show definite bone callus.

Splints Combining Skeletal Traction and Counter-traction. George W. Hawley, Jr. *Bone & Joint Surg.*, Vol. XVI, No. 4, October, 1934.

Dr. Hawley describes a number of splints which promote convenience and efficiency in applying Kirschner wire traction in fractures of the tibia, fibula and the forearm. They cannot be well described in this abstract but it is recommended that anyone using Kirschner wire traction read this article.

His apparatus is similar in application to that proposed by Dr. Roger Anderson, but has some advantages over the latter.

Giant Cell Tumor of the Spine. Henry Milch. *Am. J. Cancer*, XXI, 363, June, 1934.

The author has reviewed the literature on giant-cell tumor of the spine and finds that the condition is comparatively rare.

He reports a case of a sixteen-year old boy who had had symptoms for about six months referable to his cervical spine and consisting chiefly of pain and limitation of motion. On examination, a tumor was felt in the region of the third cervical spine, roentgenographic examination of which suggested a giant-cell tumor. At operation the spinous process of the vertebra and the posterior portions of the adjacent laminae were removed. Microscopic examination confirmed the diagnosis of giant-cell tumor. Following operation, the patient was treated over this area with radium packs, receiving a total dose of 22,250 milligram hours. Roentgenographic examination a year later showed no evidence of disease and an almost complete regeneration of the neural arch.

The author suggests that such cases be treated by radiation, either alone or combined with surgery.

Osteitis Fibrosa of Recklinghausen, Heterotopic Parathyroid Adenoma, Metastases of a Benign Adenomatous Struma and Adenoma of the Left Adrenal in the same Patient. Hilding Bergstrand. *Am. J. Cancer*, XXI, 581, July, 1934.

The author reports this case in detail with roentgenograms, photographs, and photomicrographs. The presence of adenomata in three internal secretory glands points to an embryonal disturbance as the basis of them all. Metastases of a thyroid adenoma are rare. In this case they were present in the lungs and in the humerus, and showed the characteristic microscopic picture of struma colloidales. The author states that the essence of Recklinghausen's disease of bone appears to be a general osteolysis around the bone corpuscles. The other changes—such as new bone formation, cysts, and giant-cell tumors—are secondary and are not essential to the diagnosis.

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
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714 Medical Arts Bldg., Oklahoma City.

Transplantation of Living Grafts of Thyroid and Parathyroid Glands. By Harvey B. Stone, James C. Owings and George O. Gey. *Annals of Surgery*, October, 1934, Page 613.

The authors have proved to their satisfaction that certain endocrine tissues may be transplanted successfully from one individual to another when dealing with dogs. Factors of success in such transplants include the choice of a proper site for the graft, proper size and form of the graft, and biochemical adaptation of the graft to the host. The axilla and groin are proper sites. The graft should be tiny fragments or tissue cultures. The graft should be grown in culture in a medium containing the blood fluid of the host to adapt it before implantation.

They have submitted ten human beings to grafting treatments, using the method developed by experiments on dogs. Five of these were grafts of thyroid tissue and five were grafts of parathyroid tissue. Of these ten cases, only two are of sufficiently long standing to permit an opinion as to the success of the experiment—both of them being parathyroid tetany cases. In these two cases they believe that they are justified in assuming that the grafts are successful.

They have formulated certain requirements as desirable in the site in which the graft is to be placed. There should be a closely adjacent vascular supply, from which new vessels may develop to support the growing graft, but the tissue itself should not contain a rich capillary network, as does the liver and spleen, because in such a bed the development of hematoma is too apt to choke the graft. The tissue selected should be loose in texture, free from a dense capsule such as parenchymatous organs have, or a firm sheath as is the case with voluntary muscles. These conditions result in pressure on the graft that inhibits its growth. The site selected should be easy of access without difficult or hazardous operative exposure for the implantation, and should, of course, not involve damage to any necessary or important organ. All of these conditions are met by the loose areolar tissues of the axilla and groin, and it is in these localities that practically all of their successful grafts have been made, both in dogs and humans.

They also believe that many previous attempts at cross-grafts of endocrine glands failed because the grafts were too large. Until an organized blood supply can grow into the graft, it must live, if at all, by processes of osmosis and diffusion. Such processes are effective only on cells in intimate contact with the body fluids of the host, hence only a few peripheral layers of cells on the graft. The rest of the more central portions of the graft necrose, and this entails great danger to the whole graft. For this reason they employ tiny fragments of glandular tissue, a millimeter or so in diameter, or better still a growing culture of gland tissue in which the cells are spread out in thin sheets ideally suited to intimate contact with the host fluids.

Another factor in the problem is the adjustment of the graft to the chemistry of its new environment in the host animal. We have all seen grafts of skin from one person to another often look as though they would "take" for a week or ten days, and then begin to disintegrate, and finally in two or three weeks entirely disappear. The authors have had similar experiences in their earlier experiments with

thyroid and parathyroid tissue. The explanation of this, they feel, is that there is a chemical disharmony between the graft and its environment that leads to its death. An effort should be made to secure an adaptation of the graft to the body fluids of the host before it is actually implanted. To obtain this objective the authors developed the following method: It is known that mammalian tissues of various kinds may be grown artificially "in vitro" by the methods of tissue culture. In such cultures a medium is used that must contain nutriment substances, and these are usually provided by using serum and plasma, but experience has shown that it is not necessary to use a serum and plasma of the animal from which the tissue to be grown has been obtained. Indeed, it is not even necessary that these fluids be from an animal of the same species. Considering these facts they decided that it might be possible to adapt the graft to its host by first growing it as a tissue culture in a medium containing the body fluids of the future host. This they have done in all the cases in which they have secured successful grafts. They are not certain as to whether or not such a preliminary adaptation is absolutely necessary, but they believe that it adds greatly to the chances of successful grafting.

The two reported successful human parathyroid grafts are quite convincing. These two cases have been grafted fifteen months and ten months, respectively. Their clinical recovery from all symptoms of tetany and the return of their blood chemistry to normal are evidence of success. Realizing that parathyroid tetany cases sometimes tend to spontaneous recovery, it would seem that the grafts in these two cases have been successful because of the long period of stationary or progressive tetany before grafting was done. However, from the human experiments examined they are not yet justified in drawing any general conclusions.

—LeRoy D. Long, M.D.

Metallic Poisoning Simulating the Acute Surgical Abdomen. By Robert C. Fisher, *American Journal of Surgery*, October, 1934, Page 175.

Dr. Fisher, a medical examiner in New York, reports in detail four cases of heavy metal poisoning which clinically appeared at first to require immediate operation for the relief of an acute abdominal condition. The four cases reported were due to lead, mercury, arsenic and to "Paris green". (Paris green is a compound of copper and arsenic.) On further study in the hospital they presented a puzzling picture. Fortunately each patient was treated conservatively. The true nature of these cases was not revealed until an autopsy had been done. The striking symptoms in each case on admission were severe abdominal pain and vomiting. For this reason the case was sent to the surgical service. Routine examination by the ward physician resulted in a number of "provisional diagnoses," including acute appendicitis, ruptured ulcer, acute pancreatitis, acute cholecystitis, kidney stones, intestinal obstruction, empyema of the gall bladder, coronary thrombosis and acute gastro-enteritis. On further study all these cases showed a soft abdomen which was not distended and in which no mass could be felt. An important feature is that none of the patients had fever. In one case the vomiting was persistent and frequent, and a watery diarrhea was soon developed. The stools looked very much like the material vomited, and contained pale greenish blue flakes. In other cases the stools were

abnormal in that they showed either fresh blood or a strongly positive guaiac test (in the absence of hemorrhoids and other rectal lesions). The vomitus in two cases showed a positive guaiac reaction and microscopic red blood cells, one patient vomited coffee ground material soon before she died. A questionable jaundice of the skin and sclerae were described in one case, but the icteric index was found to be within normal limit. Another case showed only a slight jaundice clinically, with an icteric index of 43. Severe kidney damage was evident from a study of the urine and blood chemistry in three cases. The other patient lived only fourteen hours after the onset and did not void during this time. Although none of these patients looked on inspection like a chronic nephritic with uremia, the urine showed white blood cells, red blood cells, casts and albumen and was scant in amount. The N.P.N. and urea in the blood were elevated far beyond normal limits.

Lead is probably the most important of the metallic poisons. Acute lead poisoning is rare. The type usually seen is similar to the case described here, a typical case of chronic lead poisoning. This type of poisoning is important both in industry and outside of it. So-called epidemics of lead poisoning have occurred from drinking water contaminated by the lead in the pipes through which the water flows. Other cases result from drinking beer brewed in lead lined vats or wine contaminated by lead. Lead may get into food when the food is cooked in lead vessels. Vegetables and fruits may absorb enough lead to cause harm when eaten if they are sprayed by an insecticide containing lead arsenate. On being absorbed lead is probably transported in the blood stream in the form of colloidal lead phosphate, and deposited in the tissues, especially the bone as tertiary lead phosphate. As long as the lead remains stored in the bones, no symptoms of poisoning develop. It has been shown that as long as there is a positive calcium balance and a normal P.H. of the blood, lead remains in the bones. However, when a condition of alkalosis or acidosis obtains, it is thought that lead is dissolved out of the bones and re-enters the circulation coming into direct relation with vital tissues such as liver, kidney, and bone marrow. This may explain why a sudden appearance of symptoms of lead poisoning may occur in an individual who has not been exposed to lead absorption for some time.

We are to deduce from this report that when a patient presents a picture of an acute abdomen as evidenced by severe abdominal pain and frequent vomiting, but physical examination reveals no rigidity, distention or mass, and there is no fever, intensive study of the vomitus, stool, urine, and blood chemistry is indicated. If there is heavy metal poisoning there will usually be distinct evidence of renal impairment within about twenty-four hours after the onset of abdominal pain.

This report is of particular interest to me because of personal experiences while caring for the employees of a local storage battery manufacturer. A number of the men working in this plant have chronic lead poisoning and several of them have had repeated attacks of acute colic. Each time an acute colic occurs there is always raised a question of whether or not the subject has an acute surgical abdomen. On the other hand, one of these known cases of chronic lead poisoning did have an acute mechanical intestinal obstruction which was not associated in any way with his lead poisoning.

—LeRoy D. Long, M.D.

BOOKS RECEIVED

Synopsis of Genitourinary Diseases: By Austin I. Dodson, M.D., F.A.C.S., Richmond, Virginia. Professor of Genitourinary Surgery, Medical College of Virginia; Genitourinary Surgeon to the Hospital Division, Medical College of Virginia; Genitourinary Surgeon to Crippled Children's Hospital; Urologist to St. Elizabeth's Hospital; Urologist to St. Luke's Hospital and McGuire Clinic. With 111 Illustrations. Price \$3.00. The C. V. Mosby Company, St. Louis, 1934.

Senile Cataract, Methods of Operating: By W. A. Fisher, M.D., F.A.C.S., Chicago. Professor of Ophthalmology, Chicago Eye, Ear, Nose and Throat College; formerly Professor of Clinical Ophthalmology, University of Illinois; formerly Surgeon, Illinois Charitable Eye and Ear Infirmary; formerly President, Chicago Ophthalmological Society; member, Illinois State Medical Society; Chicago Medical Society; Fellow, American Medical Association; Fellow, American College Surgeons; Fellow of the Academy of Ophthalmology and Otolaryngology. With the collaboration of Professor E. Fuchs, Vienna, Austria; Professor I. Barraquer, Barcelona, Spain; Dr. H. T. Holland, Shikarpur, Sind, India; Dr. John Westley Wright, Columbus, Ohio; Dr. A. Van Lint, Brussels, Belgium; Dr. O. B. Nugent, Chicago, Ill. 267 pages, 183 illustrations, 112 of which are colored. Chicago Eye, Ear, Nose and Throat College, Publishers, Chicago.

Institutional Care of Mental Patients in the United States: By John Maurice Grimes, M.D. Four years a staff member of The Council on Medical Education and Hospitals of the American Medical Association. Price \$3.00. Published and Distributed by the Author, 1816 North Clark Street, Chicago.

Applied Anatomy, the Construction of the Human Body Considered in Relation to Its Functions, Diseases and Injuries: By Gwilym G. Davis, M.D., late Professor of Orthopedic Surgery and Associate Professor of Applied Anatomy in the University of Pennsylvania. NINTH EDITION, Reset, Reillustrated and Completely Revised by George P. Muller, M.D., Professor of Clinical Surgery, Graduate School of Medicine, University of Pennsylvania; Surgeon to the Misericordia and Lankenau Hospitals; Assisted by Bernard J. Alpers, M.D., Assistant Professor of Neurology, Graduate School of Medicine; Neurologist to the Philadelphia General and Pennsylvania Hospitals; and Robert A. Kimbrough, Jr., M. D., Associate in Obstetrics and Gynecology, University of Pennsylvania; Assistant Gynecologist, University Hospital; Obstetrician, Pennsylvania Hospital; and Stirling W. Moorhead, M.D., Assistant Professor of Urology, University of Pennsylvania; Urologist to the Methodist Episcopal Hospital; and I. S. Ravdin, M.D., Professor of Surgical Research, University of Pennsylvania; Surgeon to the University Hospital; and S. Dana Weeder, M.D., Surgeon to the Germantown Hospital; Assistant Surgeon to the Chestnut Hill Hospital. With Six Hundred and Seventy-four Illustrations Mostly From Original Dissections and Many in Color, by Erwin F. Faber. J. B. Lippincott Company, Philadelphia.

A Manual of the Practice of Medicine: By A. A.

Stevens, A.M., M.D., formerly Professor of Applied Therapeutics in the University of Pennsylvania; Honorary Consulting Physician to the Philadelphia General Hospital; Consulting Physician to St. Agnes Hospital, Philadelphia. Thirteenth Edition, Revised. 685 pages. Philadelphia and London: W. B. Saunders Company, 1934. Cloth, \$3.50 net.

LILLY RESEARCH LABORATORIES FORMALLY OPENED

More than a thousand investigators and research workers were present at the formal opening of the new Lilly Research Laboratories at Indianapolis on October 11. The gathering of distinguished visitors representing many noted bodies and famous institutions in this and foreign countries as well, assembled in a mammoth tent erected for the occasion adjacent to the Lilly Laboratories.

At the formal opening exercises, in the afternoon, Eli Lilly, head of the Lilly organization, presided as chairman. Mr. J. K. Lilly, chairman of the board of directors, was introduced and responded briefly on "Research in Manufacturing Pharmacy" from the time of his entrance in the organization in 1876 up to the present, when there is so much evidence of the fact that medical science, in becoming an integral part of our social structure, has, in turn, become in a broad measure dependent upon industrial development.

Following Mr. Lilly's remarks, Dr. Irving Langmuir, director of research for the General Electric Company, discussed "The Unpredictable Results of Research." The speaker stressed the point that fundamental research should be pursued by industrial corporations regardless of any immediate possible commercial returns therefrom. He gave an account of his purely theoretical gas absorption studies which ultimately led to the development by the General Electric Company of their present highly efficient electric light bulb.

The chairman then introduced Sir Frederick Banting, who talked on "The Early History of Insulin." He gave an account of the early experiments conducted by Dr. Best and himself which first demonstrated the existence of Insulin, and expressed his great appreciation of the co-operation which he and his associates had received from the staff of the Lilly Research Laboratories in the development of a practical, large-scale procedure for the production of Insulin.

Sir Henry Dale, director of the National Institute for Medical Research, London, and secretary of the Royal Society, was the last speaker on the afternoon program. He chose as his topic "Chemical Ideas in Medicine and Biology." Sir Henry spoke of the immediate objectives of research in such laboratories as those of Eli Lilly and Company, and of their natural and proper differences from those of the laboratories supported by academic or public endowment. It was his thought, however, that the differences in result for the progress of medical science are often more formal than real. He expressed the hope that the growth of co-operation between those working in these different spheres might yet bring to many the rather rare privilege that had come to him of migrating from one to the other and back again, and thus of knowing at first hand the best, that each can offer.

According to Sir Henry, the change that has taken place in the scope of pharmacy has a revolutionary aspect. He cited the fact that pharmacy not very many years ago was predominantly concerned with the traditional drugs that had come into use through empirical observation. Even though with the years

had come new additions from time to time, the therapeutic outlook and attitude had changed but little for centuries. He pointed out that a beginning had been made by pharmacology toward rationalizing the use of those drugs in common use which had an action sufficiently definite to be susceptible to experimental analysis. The attitude of the physician and that of the investigator, in the opinion of the speaker, was, however, one of skeptical pessimism.

He did not suggest that palliative treatment no longer existed in medical practice or that its complete elimination was expected or even desirable. He cited the fact that alleviation of symptoms not only brings the richest reward of gratitude but said that it might be the most urgent medical duty.

Sir Henry referred to the fact that he was speaking in the presence of Sir Frederick Banting and in the place where the large-scale production of Insulin had its earliest organization, and that he felt he need not remind his audience of the revolutionary change which has taken place in the treatment of a disease that only a few short years ago was the despair of the physician.

"The transformation of the whole aspect of one disease by the discovery of Insulin has attracted a more general attention," said the speaker, "than almost any other advance in medical science within our time." He was of the opinion that this discovery might be considered indicative of the wider progressive change in therapeutic method, based upon new knowledge of the causes of disease and aiming at the removal of those causes.

The speaker expressed the thought that looking at the change as a whole, one might distinguish two main contributory factors.

The first of those was the recognition of infections as due to the invasion of the body by living micro-organisms. It is a commonplace, he said, that preventive medicine was born of this discovery, that it gave a new direction to the therapeutics of infective diseases, in the search for remedies specifically killing or limiting the growth of the infecting micro-organisms or specifically neutralizing the poisons which they produce in the infected body. A few of the older remedies, indeed, according to the speaker, owed their value to an unconscious application of such specific actions for the control of infective organisms which modern research has since identified: cinchona, ipecacuanha, mercury, and the iodides. Contrast with this, he said, the resources of modern therapeutics, with its range of antitoxins and bacterial products, and its growing list of new synthetic compounds discovered as the result of deliberate and organized search for substances which shall be harmless to the infected patient in doses which kill or prevent the multiplication of the infecting organism. Ehrlich, said the speaker, termed this new type of therapeutics "chemotherapy." A new and exactly chemical basis for these mysterious phenomena of immunity is even now being built, according to Sir Henry, the synthetic production of artificial specific remedies for infection which has, in the course of some twenty-five years, given us arsphenamine and other organic arsenical compounds such as tryparsamide; various derivatives of antimony; complex organic substances related to the dyestuffs on the one hand or to natural alkaloids on the other, and specifically effective against the trypanosomes of African sleeping sickness, or against the parasite of malaria, still the most deadly enemy to human life and health, if we view the world's peoples as a whole. We may properly class these synthetic substances, according to the speaker, with the antitoxins and other antibacterial substances, as artificial and natural agents

for the removal from the body of harmful invaders from without.

A second principal factor in this change in therapeutic outlook may be found, said the speaker, in the recognition of diseases due to the lack of substances normally present in the body. Modern therapeutics, he said, can show no triumphs more brilliant than those which have followed the discovery of methods of preparing a number of glandular products in a state of sufficient purity to enable them, by artificial administration, to correct an abnormal deficiency. In the speaker's opinion, there can be no doubt that preparations from these glands are destined to acquire an increasing range of success of application, as the methods for purifying and stabilizing their subtle principles are progressively improved, and as clinical science, thus able to apply them, recognizes more clearly the conditions due to partial defects of their natural supply.

It is Sir Henry's thought that there is the second class of specifically acting substances, necessary like the hormones for healthy function and growth, but obtained by the body mainly from the food, and known to all the world as "vitamins." He related the story of Jacques Cartier and his expedition, when they landed in Canada four hundred years ago. Being attacked by scurvy, they learned from the native Indians to cure the condition with an infusion of the fresh sprouting tips of a species of fir tree. Nobody can guess how long the Canadian Indians had possessed this life-saving knowledge, just as those of the South American continent knew of the value of cinchona bark in fevers and of ipecacuanha in dysentery. This method of treating scurvy, said the speaker, passed out of the white man's memory for yet another two centuries. Sir Henry told how the Royal Society of London, when giving to James Cook the Copley Medal, based the award on his improvement of methods for preventing disease among sailors.

It would be possible, he said, to regard this remarkable change in therapeutic outlook and method simply as one phase in the general scientific development which has transformed a whole range of human activities in a generation. He felt that if we look for a particular rather than a general cause, we shall find it in the rapidity with which chemical knowledge and ideas have, in this same period, permeated the whole of medical and biological science. Biochemistry was referred to as having taken rank among the great divisions of science, and its influence, he thought, penetrated the whole range of the medical and biological sciences, while organic chemistry itself was showing a welcome tendency to recover its original objective, in studying the products and processes of living organisms.

The newer developments have but little relation to the art of the individual pharmacists whom our fathers knew, said the speaker, but we must resign ourselves, as in other spheres of human activity, to the loss of the individual art in exchange for scientifically organized production. In fact, he continued, in order to meet these novel, various, and expanding demands of modern therapeutics, pharmacy has to become one of the most highly organized departments of scientific manufacture, covering an extraordinary range of expert knowledge and equipment. It now needs stables and pasturage, incubation rooms for large-scale culture of a wide variety of bacteria, and sterile rooms for manipulation of the products; chemical plant adapted to the difficult synthesis of complex and delicate compounds, or to the chemical and physical separation and purification of unstable natural principles, from animal organs only obtainable in adequate quantity and freshness by the co-

operation of highly organized abattoirs. He cited, in addition, a much more fundamental requirement, calling particular attention to the need for research undertaken in the spirit of free inquiry, often with no immediate practical aim or any probable result other than the increase of fundamental knowledge.

The speaker paid tribute to Eli Lilly and Company for their high rank among industrial organizations which have supported scientific research for its own sake and because they have known how to value the spirit which is engendered when scientific workers are given a wide freedom.

The afternoon speaking program was followed by an inspection of the new laboratories, the party being divided into small groups in the charge of guides.

In the evening a banquet was tendered the out-of-town guests. Mr. J. K. Lilly served as toastmaster and responses were made by Sir Henry Dale; Dr. Elliott P. Joslin, of Boston; Dr. George R. Minot, of Boston; Dr. Frank D. Lillie, of Chicago; Dr. Geo. H. Whipple, of Rochester, N. Y.; Dr. Carl Voegtlin, of Washington, D. C.; and Dr. G. H. A. Clowes, head of the Lilly Research Laboratories.

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CHORIONEPITHELIOMA: EARLY DIAGNOSIS BY THE QUANTITATIVE DETERMINATION OF ANTERIOR PITUITARY-LIKE PRINCIPLE FROM THE URINE OF PREGNANCY

Michael L. Leventhal and William Saphir, Chicago (Journal A. M. A., Sept. 1, 1934), present a case illustrating the importance of determining quantitatively the amount of anterior pituitary-like substance

in the urine following the expulsion of a hydatidiform mole. Although historically the tumor was not the most malignant type of chorionepithelioma (Choriocarcinoma), still the high gonadotropic concentration as a biologic indicator points to the potentiality of profound malignant change. This is important because the histologic picture is not always a true prognostic index in chorionepithelioma. This fact was well demonstrated in the unusual case recently reported by Lackner and Leventhal, in which, microscopically, a typical choriocarcinoma was found, and, in spite of both pulmonary and vaginal metastases, cure (the patient is now well after eight years) followed hysterectomy and high voltage roentgen irradiation. It will be interesting, in the future, to note whether the amount of anterior pituitary-like principle bears any relation to the histologic classification of the choriomas (as set forth by Ewing). The performance of a radical operation entirely on the basis of a laboratory observation of 333,000 mouse units of gonadotropic substance per liter of urine and in the absence of any palpable or visible pathologic change was justified by the discovery of a potentially malignant tumor in an early stage of its proliferation. In the absence of clinical manifestations, an amount of gonadotropic substance in the urine in excess of 20,000 mouse units per liter indicates an early chorionepithelioma. The disappearance of a positive Aschheim-Zondek test following operation is a true indication of the absence of live chorionic villi (recurrence or metastasis). Therefore the use of postoperative radiation therapy is unnecessary in the presence of a vegetable test. This would obviate the deleterious effects of irradiation in cases in which it is not needed.

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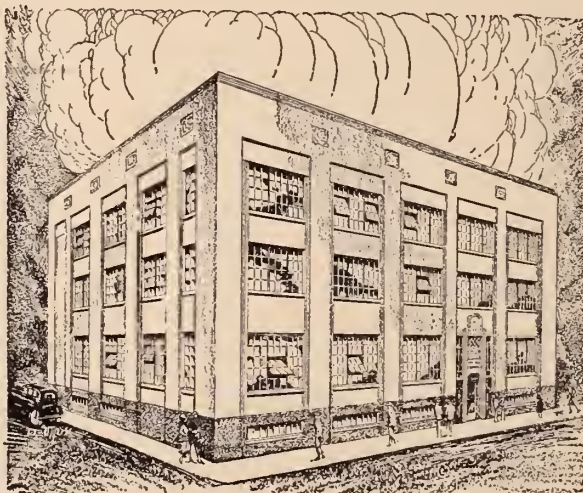
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OKLAHOMA STATE MEDICAL ASSOCIATION

VOLUME XXVII

McALESTER, OKLAHOMA, DECEMBER, 1934.

NUMBER 12

ANO-RECTAL FISTULAE*

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OKLAHOMA CITY

An ano-rectal fistula is an infected tract between the skin and the anus or rectum. If the tract fails to be complete but opens only on the skin surface it is called a blind external fistula; if it opens only into the anal or rectal lumen it is called a blind internal fistula. Clinical usage sanctions this nomenclature though strictly speaking, if they positively are not complete, then they should be called peri-anal, perirectal, or ischio-rectal sinuses. In further support of the clinical nomenclature of fistula, it may be said that a minute opening, making it a fistula, that is, opening from a viscus, is present in most cases even though not demonstrated. Pennington gave us a very practical classification of fistulae of this region as follows: (1) Anal, opening into the anus. (2) ano-rectal, opening at the pectinate line; (3) rectal, opening into the rectum proper. Examination with the proctoscope or anoscope will aid in determining the type of fistula present. The majority of my cases have been between twenty and fifty years of age. The oldest was seventy-eight years; the youngest six months. The male patients outnumber the female three to two.

Fistula is usually a sequella of an abscess. Inflammation in an anal crypt at the ano-rectal junction, or an anal fissure is usually the precursor of the abscess. The infecting organism is usually some of those constantly present in the bowel content, but I have seen fistula follow gonorrheal cryptitis and proctitis. Trauma of the ano-rectal junction often is an initiating factor and a debilitating condition such as tuberculosis, diabetes, or syphilis,

predisposes to the development of the local infection. When the abscess discharges and its cavity is filled in, an infected tract lined by granulation tissue and surrounded by fibrous tissue, remains. The torn and infected crypt, or fissure, is usually in the posterior midline. The inflammation may travel through the lymphatics or by dissolution of tissue into the space behind the anus, or into the ischio-rectal spaces. Pus may dissect from the space behind the anus into both ischio-rectal spaces, forming a horseshoe-shaped abscess with one or numerous discharging points on each side. In most cases there is a single internal opening.

Contraction of the walls of the abscess cavity in the ischio-rectal fossa results often in a tortuous infected tract. Temporary occlusion of the opening of this tract results in the collection of pus under tension again, with malaise and the recurrent pain, swelling, and discharge so well known in the history of these cases. The kinking of the tract near its internal opening or its occlusion temporarily, may be the reason the examining probe or dyes do not always enter the rectum, and yet the minute internal opening is present. Re-infection with fecal particles through a small internal opening will explain the chronic course or continued existence of many fistulae. It has become a habit to look for tuberculosis in patients with ano-rectal fistulae (and it might be said in an aside that it has become a habit to look for lues, recent Neisserian, or chancroidal infection in those with multiple anal excoriations or fissures).

Symptoms: A tender or painful discharging point or points in the region of the anus is the usual complaint of the pa-

*Read before Section on General Surgery, Forty-second Annual Meeting Oklahoma State Medical Association, Tulsa, May, 1934.

tient. The purulent secretion, even though slight, may be very disagreeable as to odor. The area of tenderness is increased in cases of multiple fistulous openings. A so-called blind external fistula may cause practically no complaint while its orifice remains open. As indicated previously, I feel that most fistulae have at least a minute internal opening. The larger this is and the more liquid the bowel content, the more pain and discharge the patient will have. The pathology at the internal opening may cause an uneasy sensation or tickling in the anal canal or pruritus. Intense pruritus is present in some of the cases having a minute superficial submuco-cutaneous tract or tracts. Bladder symptoms, sacral backache, or pain in the hip or down the thigh is occasionally present. Toxic absorption from infection, manifested by rheumatic symptoms and arthritis, in my experience, has occurred oftener, in the presence of the small pus pocket associated with cryptitis or a blind internal sinus, than with a complete fistula, or even the large more acute ischio-rectal abscesses. Rectal operations on numbers of the former class have been followed by improvement or cure of the rheumatism.

Diagnosis: The patient has, months or years before, developed rectal discomfort, pain, fever and swelling, the worst of which subsided when the abscess burst or was incised. There are recurrences when discharge from the tract is blocked. Close inspection may be necessary to see a depressed external opening or slit in a previous incision, but on the other hand a small tab or granulation tissue may mark the external opening. Pressure about the opening usually brings a show of pus, though thin epithelium occasionally bridges over the opening. Deep palpation in most cases follows the indurated tract upward in the anus. A pit, depression, or merely a hypersensitive spot (anal crypt), may or may not be felt, indicating the internal opening. Very rarely there is more than one internal opening, this usually representing the secondary rupture of a communicating submucous or mural abscess at a higher point. Positive evidence of an internal opening is afforded when methylene blue, seven parts, and hydrogen peroxide, one part, gently injected externally runs from the anus or spots gauze which has been laid into the rectal lumen as a diagnostic procedure. Probing should be done with caution. It is painful without anaesthesia; under anaesthesia it is valuable but great care should be taken to avoid

false passages. Complex fistulae are followed more surely by injecting ten per cent bismuth subnitrate in vaseline and taking a stereoscopic x-ray. Undue force should not be used in making the injection. Both the pictures and the bismuth remaining in place may be helpful in locating the multiple tracts at the operation, which should be done within a few days. A general observation has been made, that most cases having external openings more than about two inches distant from the anus have a tract leading to an internal opening at the posterior ano-rectal commissure. This is true also of those external openings nearer than two inches if they open posterior to a line bisecting the anus. The short tracts which open in the anterior half of the anal region usually lead in a radial direction to a corresponding anterior anal crypt. About 50% of the internal openings are posterior, 20% anterior, and the remainder laterally placed.

Sinuses in the coccygeal or sacrococcygeal region may be from an infected pilonidal cyst. Points in the differential diagnosis are a normal appearance through the proctoscope, no induration on rectal digital examination, negative x-ray of the bony structures, perhaps a post-anal dimple from or near which one or more openings are present evidently connected with tracts forming a mass over the sacro-coccygeal region. Since tracts of epithelium extend out from the palpable mass of the cyst, a wide block removal dissecting down on the bone especially removing tissue over the coccyx, is necessary. Some surgeons advise excising the coccyx at the same time. Where too much of the sacrum lies bare I have followed Lahey in about half my cases in sliding a gluteal skin to fascia flap over to the central position overlying the bone. The resultant defect over the buttock fills in rapidly and a broad tender scar over the weight bearing part of the bone is avoided.

There is a higher percentage of ano-rectal fistulae in persons with pulmonary tuberculosis than in others. Yeomans says that fistula is a complication in about 6 per cent of sanatorium cases of pulmonary tuberculosis. It takes work to prove that a given fistula has in its walls, tuberculous inflammation. Many smears or scrapings of the tract will not show the bacilli. Microscopic study of fistulous tissue freed from surface contamination from the bowel contents (which frequently contains tubercle bacilli), and culture of the tissue preparation and inoculation

of guinea pigs are the methods of investigating accurately. Forty per cent of the cases are considered tuberculous in some charity clinics, while some proctologists conclude about five per cent of fistulae coming to their offices are due to tuberculosis locally. After giving full weight to the history and to x-ray and other examination of the lungs, as well as to local tissue examinations, L. A. Buie thought 5.4% of a series of his fistulae studied had tuberculosis as a cause. He compiled figures from a number of continental hospitals for tuberculosis and found that about 3% of their patients had anal fistula or ischio-rectal abscess.

A. J. Chisholm, investigating by cultures and guinea pig inoculation of fistulous tissue, found it tuberculous only in the patients having also some type of pulmonary tuberculosis. But his positive findings in them were high—77% in those having also active pulmonary tuberculosis and 55% in those having also inactive (arrested or fibroid) pulmonary tuberculosis.

Given a pulmonary tuberculosis case, he may have only a simple pyogenic fistula, or we may fail to demonstrate local tuberculosis in his fistula, despite its being there. If the edge of the opening is undermined, the granulations unhealthy looking and the discharge thin, then especially in a tuberculous patient we feel that it is a tuberculous fistula.

The history may impress us in considering a fistula tuberculous. A mass less painful than the usual one, moveable in the ischio-rectal fossa, changeable or slowly increasing in size, becomes fixed and ruptures either back into the bowel or out on the skin; this over a period of time without the usual acute fever and pain attendant upon the development of pyogenic infection in this region. The point of discharge back into the bowel wall may be higher than the ano-rectal level where most of the pyogenic tracts connect. Pale unhealthy looking granulation tissue is seen at the orifices. Whether tuberculous or not, the fistulae should be operated, and with proper operation we are curing these fistulae in tuberculous patients.

The tubercle bacilli often come through uninjured bowel mucosa, according to Calmette. However, tuberculosis of the seminal vesicles, coccyx or pelvic bones may be the antecedent of the ischio-rectal infection.

If there is extensive infiltration, excision should not be attempted. Fistulotomy

of the external part will maintain drainage until such time as connective tissue barriers have been better formed. Rough manipulation of tuberculous tissue and cutting through it is to be avoided. Nature builds a dense fibrous tissue wall in the chronic cases about the granulation tissue lining the fistulous tract. This should be excised by the knife cutting in healthy tissue in the case of simple straight fistula; more often the tracts are tortuous with much inflammatory reaction and are best treated primarily by incision to promote drainage and allay inflammation. The cautery is recommended for its sterilizing effect on this tissue by some men, but by others is not used. I prefer the cautery especially for its hemostatic effect in situations where otherwise much clamping would have to be done in infected tissue. Exposure to the sun or ultraviolet light is helpful to the healing of these wounds postoperative. Irradiated petrolatum has been beneficial to some of them.

Under differential diagnosis should be mentioned actinomycosis of this region and also the fistulae that occur in connection with malignancy of the rectum, chronic inflammatory stricture of the rectum, and syphilitic lesions. About one-fourth of the fistula cases in my rectal clinic at the University Hospital have had positive blood Wassermanns.

Treatment: A few small simple fistulae have been cured by injection of various irritants. If improvement is not evident promptly the patient should not be subjected to interminable injections or packings. The use of an elastic ligature threaded through the fistula is very seldom indicated.

Practically the treatment of fistula in ano is operation. It may be either incision (fistulotomy) or excision (fistulectomy) with or without a variable amount of closure by suturing. The distal part of the tract may be excised and a silk ligature threaded through the remainder encircling the involved part of the sphincter, this latter to be incised at a later time when the distal part has filled in and the granulation will prevent undue retraction of sphincter ends when they are severed. Fistulectomy under antiseptic precautions of a superficial distal tract can be followed by suture of that part of the wound. On the other hand a lateral fistulous tract often goes very deep being the remains of the abscess in the ischio-rectal or supra-levator

or spaces. This has to be kept open and will heal if the other tract from the ano-rectal junction is laid open and the reinfection thus stopped. Deep incision into the anus can be made in the midline posteriorly. Judgment must be exercised as to the amount of sphincter that can be cut at the other parts of the circumference at a single operation. The sphincter should not be cut obliquely, but at right angles, and never in more than one place at the same operation. Other procedures to prevent undue retraction of the cut ends of the sphincter are suturing of the ends until granulation tissue sets them in place, and primary suturing of the cut ends to firm tissue underlying them.

I have not had success with the Elting procedure to close the internal opening by mobilization and suture of the bowel wall. However, I will describe a procedure which might be considered akin to it in some respects, which has given me uniformly good results:

Several years ago I began saving the continuity of considerable sphincter muscle at the site of fistulectomy. Previously I had usually followed the practice in rectal surgery of cutting through everything lying between the fistula and the lumen of the bowel. By using smaller hemostats and scissors I have been able to make a more minute dissection and excision of the tract without severing the overlying sphincter. A slight amount of freeing of the bowel wall above is done. It is then possible to place the sphincter upward and stitch the rectal wall downward over it fixing the sphincter against solid tissue in a somewhat higher but nevertheless good functioning position. The final result is a more normal anal contour without the notched defect sometimes marked after the usual operation. Since development of this way of saving sphincter I have been able to operate in a single trip to surgery on two separate fistulae on opposite sides of the anus of the same patient who previously would have had to recover from one, and then return in a month or so for another anaesthetic and operation on the other side.

Inflammation is attended by destruction of tissue. Accordingly the patient who has had an extensive abscess and fistula must not expect, either with or without surgical treatment, to have a supple anus functioning in exactly the same way it did before inflammation developed there. A well functioning intact external sphinc-

ter is necessary to retain gas, so that the patient who develops inflammation with or without incision here must not expect too much as to this. Its control is variable. However, practically all patients as they come with internal openings not too high in the bowel, can be assured that their fistula can be operated without resulting incontinence. This will require an intelligent operation, in two stages if necessary. I have been surprised in examining some cases that have anal distortion from previous multiple fistulae and operations, to note the remarkable grip which the levator ani muscles are exerting and the statement of the patient that he holds the bowel action perfectly.

Incising a fistula which goes through a portion of sphincter, will in some cases initiate the prolapse of some rectal mucous membrane or a small hemorrhoid, hitherto symptomless. I try to anticipate this possible complication when operating on a chronic fistula without especial purulent discharge, and remove any definitely redundant mucous membrane or hemorrhoid. This is done when the fistula operation has been comparatively clean and not too extensive. In the presence of virulent pus, necessary drainage only is done.

An anus which has suffered loss of tissue due to inflammatory destruction will not be perfect anatomically, but increasingly our patients are getting good function and are well satisfied.

As one of them wrote me several months post-operative, "The cut place does not hurt and has healed up and as a whole my rectum works alright."

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Dr. Allen, Tulsa: With few exceptions, every anal or rectal fistula is preceded by an abscess which has its origin in the anus and rectum. Cultures from this abscess usually show a predominant organism, the streptococcus, staphylococcus, bacillus coli, tuberculosis bacillus, and occasionally the gonococcic and bacillus saphrogenes. These are the most frequent organisms. I was interested in seeing Dr. Murdoch place the emphasis on the incidence of tuberculosis bacillus. It seems to me that that point ought to be stressed, because most insurance companies feel that when a fistula is reported in the history of a case it is just bound to be tuberculous. I think they are

over-cautions. It is all right to investigate that, but it seems to me they are over-estimating it in the general run of cases. In Houston, Harp, who has rather a large clinic, places the incidence there between two and four per cent. Hirschman places it between five and ten per cent. On the other hand, Miles of London places it as high as fourteen per cent. Of course, it depends a good deal on the character of patients one is seeing, but in the general run of cases it seems to me that the incidence ascribed to the profession at large is far above the real incidence of it. As to the other infections, one might stress the source of these infections, the organisms like the staphylococcus and streptococcus. As I say, this comes from the anus and rectum, but from where does that come? I think we are overlooking our infections from above. We don't stop to investigate what our infections are in the mouth. We so frequently see staphylococcus and streptococcus infections in the teeth and gums, the tonsils and sinuses, and I feel that if those things are not properly taken care of the infection may occur from them. No doubt there are a lot of peri-rectal abscess and fistulas that recur because of maybe a new crypt or new hemorrhoid has gotten infected simply because the infection upstairs has not been properly taken care of, and I feel that the rectal examination is not complete until these infections up there have been looked after and cleared up because your rectal sphincter is not always going to heal up properly until these infections above have really been cleared up as they should. That is particularly true, I think, of the streptococcus. Speaking of the treatment, I feel that the surgery of these fistulas should be well planned. A simple fistula requires very little planning, of course, but when it comes to the complicated fistula, that should be studied thoroughly and, as Dr. Murdoch has said, an x-ray should be made of the fistula after previously injecting it with bismuth or something of that kind because a picture will often times clear up the situation and make it very much easier for us to get rid of the fistula entirely. Dudley Smith states that the outstanding reasons for failure of fistula operation are: First, failure to find the internal opening; second, failure to follow all tracts to their termini and to open and excise them; third, faulty after-

treatment; fourth, a failure to preserve the function of the bowel.

CLOSING DISCUSSION: *Dr. R. L. Murdoch.*

The question about tuberculosis is academic rather than practical because we are curing most of them also. A general or inhalation anaesthetic is not used. The tuberculous patient will recover quicker if a careful operation on his fistula rids him of the toxic absorption there.

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"Yet this third party influence, with all its unpleasant and disturbing sequels, will inevitably be thrust upon patient and physician should some of the current new schemes of medical practice ever gain acceptance.

"Carried to their full development, such plans would mean that your family doctor would be the hireling of a commercial organization or of a department of the state, the former built up necessarily by business promotional efforts, high pressure salesmanship and price competition, the latter made compulsory by legal enactment.

"Experience has already shown that contract or insurance schemes would not be successful if they observed carefully the principles of conduct and fair competition which operate as definitely for the public good as for professional honor. In these principles financial gain is subordinated to the prime object of service to the patient and to humanity.

"Furthermore, the history of some of these ventures reveals highly deplorable tendencies. 'Scare head' advertising has appeared as a means of frightening people into subscribing for memberships. Medical service has been promised at ridiculously low and actually impossible rates. The services of hundreds of physicians have been promised to subscribing members, whereas actually but a small fraction of that number were 'signed up' and available. Patients have found that they must be served by the physician assigned to them, not by the man of their choice. And the poorer classes have paid the same price for medical service as the very wealthy.

"No, the fine, sympathetic, humanitarian service at present rendered by the family physician can never be satisfactorily replaced by a commercial organization that retails medical service for a profit, nor by the state with a mechanized or regimented medical profession. The interjection of such agencies between patient and physician is unnecessary and cannot fail to be disturbing to all parties concerned."—From Mead Johnson & Company's Announcement in Hygeia, September, 1934.

WHAT SHOULD BE OUR ATTITUDE TOWARD THE CHILD WITH A CEREBRAL BIRTH PALSY?*

BEN H. NICHOLSON, M.D.
OKLAHOMA CITY

There is an enormous number of children with spastic paralyses who, in the course of their wanderings seeking aid, pass at one time or another through the pediatrician's office. This group has been generally classified as the birth injured—a classification which seems to be unwarranted and which is finding disfavor. These children do at some time have a careful study for evidence of pathological processes which could be removed or corrected, such as tumors, cysts, syphilis, etc. The results of the examination are usually negative for such conditions, in spite of the more recent encephalographic studies. After careful study a more or less hopeless prognosis is given, but parents continue in their hope and are bitter toward scientific medicine and actively hostile toward the obstetrician, whom they think responsible for the injury.

In recent years investigators have been unable to establish any relationship between trauma and the symmetrical spastic paralyses discovered shortly after birth. This group constitutes by far the largest number of birth palsies (235 out of 280 of Ford's¹ series). He concluded that the congenital diplegias "are not to be attributed to meningeal hemorrhage at birth, but are the result of various pathological processes of intra-uterine origin."

"Four principal arguments support this conclusion. Meningeal hemorrhage is in at least half the cases unilateral, and when bilateral is almost always unequal on the two sides; cerebral diplegias are, with very few exceptions, bilaterally symmetrical. The heads of diplegics are usually either definitely microcephalic or slightly below normal size; meningeal hemorrhage causes rapid enlargement of the head. Children who are known to have intracranial bleeding at birth or in infancy do not develop diplegia; lastly, the pathological anatomy of true congenital diplegia is such that it cannot be reconciled with any theory of birth injury."

In a discussion on the subject, Patten²

concluded: "The frequent occurrence of bilateral motor involvement, together with defect in intelligence, indicates something more than the effects of trauma or vascular accidents in the neurologic conditions of the new-born infant. There exists probably a developmental defect or arrest which concerns either the integrity of the cortical cells or the proper myelinization of the corticospinal tracts and associated fibers."

The actual part that injury plays does not greatly matter in this discussion, but no amount of argument in favor of the origin of cerebral palsies on the basis of intra-uterine disease or defect can minimize the importance of obstetrical care of the pregnant and parturient woman. Certainly an important factor in prevention must be prenatal care, particularly as regards diet and hygiene. Concrete proof of this exists in the case reported by Kugelmass³ of the woman who, while eating a low protein diet because of hypertension, was delivered of four living babies, all of whom died of hemorrhagic disease of the new-born. She proceeded to and through her fifth pregnancy on an adequate protein intake and was delivered of a normal child who went through the neonatal period without mishap and is still living. A limited protein diet accompanied her sixth pregnancy and she was delivered of another living baby who died of hemorrhagic disease of the new-born.

Crothers⁴ states that in considering cerebral palsies we are dealing with one of three main types of disturbance or with any two or all three in combination—mental defect, disorders of cortical control and disturbances of associated movement. Experience with these children has taught observers that if the mentality remains intact with proper care and training they will overcome to a large extent the spasticity and incoordination. This comes about probably because unimpaired motor neurons upon reeducation assume the function of those which have been irreparably damaged.

Our problem is first to classify the dis-

*Read before the Oklahoma Pediatric Society, Forty-second Annual Meeting, Tulsa, 1934.

orders in our minds as best we can in an effort to determine whether or not there is enough residue to justify an attempt at reeducation. So often this is made doubly hard by the attitude of the parents whose minds have been confused by many suggestions as to cause and treatment. This is particularly true if it is an only child where comparison with an older child is not possible.

In taking a history and examining the patient, one must not be deceived by the appearance of the patient. As Carlson put it: "There is sometimes difficulty in swallowing because of spasm of the pharyngeal and tongue muscles; speech is difficult, and not infrequently profuse salivation with drooling tends to reflect against the normal mentality of the patient. In spite of the disability brought about by the disturbance, the mental state usually remains normal."

It matters not at what age a child's development may take place, the sequence in progress is the same. While the mental state, as Carlson says, may remain normal, certainly the mental development must to a large measure be dependent on motor experiences. The inability to sit alone, to use the hands in grasping objects, and to use the feet and legs in turning, crawling and standing must be a tremendous handicap in developing the higher centers. When we consider that the diplegic's experiences have come entirely from his special senses, lying flat on his back in bed, and when we add to this a spasm of the muscles of deglutition and phonation which makes drooling necessary and speech practically impossible, there is little wonder that he has an idiotic appearance. In addition, there is often a spasm of the facial muscles which causes the child to grimace and change his expression without cause.

With such a child it is certainly no easy matter to determine whether the physiologic residue is sufficient to justify an attempt at reeducation. Certain criteria have been established to help in this decision. Hempelmann,⁶ reporting from the Shriners' Hospital in St. Louis, recognizes the following criteria as being most favorable for the best results: "(1) The child must be of normal or nearly normal mentality; (2) he must give a history of improvement in his condition; (3) he must have no athetosis or marked incoordination of movements other than those due to spasticity, and (4) he must be willing

and old enough to cooperate in the post-operative exercises."

Hobhouse⁷ thinks the following place the the child beyond the reach of effective treatment: (1) Evidence of progressive disease; (2) the presence of a profound degree of mental defect which he thinks may be for practical purposes determined by apathy and lack of desire to make movements or handle objects; (3) persistent occurrence of fits; (4) athetoid and choreiform movements; (5) a very high degree of muscular rigidity which makes active movements impossible.

Aside from the above, probably one of the most valuable indications for treatment is the history of improvement in the child's condition. Care must be taken to ask specific questions about progress because so often the wish is parent to the thought in the mother's mind. Of course, a definite microcephalic or a very marked hydrocephalic, particularly if the hydrocephalus is progressing, is beyond hope of training.

Assuming that we have a child who is a diplegic and according to the criteria set down above we find that he can probably be reeducated, what can we do about it? Of course, we are interested in what other people are doing, but we are more interested in how the principles involved can be applied here. As far as I know, there are no private institutions in this state which are adequately equipped and the personnel of which is sufficiently trained to undertake the task of reeducation, and if there were, few people could take advantage of it. The Crippled Children's Hospital is not large enough to hospitalize these children for any appreciable length of time. We are more or less left to our own resources with the help of a physiotherapist, if one is available.

All of the people who write on the subject feel that the most important element is an obstinate optimism on the part of the patient, parent and doctor. The treatment should be directed along three lines: (1) Training; (2) avoiding or preventing contractures, (3) surgical.

It must be remembered that the defect is in the brain and not in the limb, and that no amount of passive treatment seems to be effective in preventing contractures. Active movements, even though purely reflex, seem to be the only ones effective in producing results. As active purposeful movements increase the child's motor control seems to develop and some undam-

aged neurone apparently takes over the function of the defective one.

The most effective operative procedures seem to be those directed toward the overcoming of contractures and overcoming severe adductor spasm.

How much we can accomplish, I do not know, but we are attempting at the Children's Hospital dispensary to select a few of the most suitable patients and with the help of the physiotherapy department to institute a program of reeducation. We are hoping that we can teach the mother to carry out a simple plan of exercises, beginning with the neck and shoulders. During infancy, of course, the exercises are limited by position because the infant can only be on his back. The first step is to get the child in a sitting posture to be maintained by support which will in time overcome the spasm of the back muscles and give the child a chance to use his hands in handling objects. Warm baths give relaxation, which is necessary; massage does no harm but electrical stimulation is contra-indicated since it only aggravates the existing condition of hyper-tonus.

CONCLUSION

1. The majority of cerebral birth palsies fall into the group of cerebral spastic diplegia.

2. In the light of recent investigations these can no longer be attributed to faulty obstetrics.

3. While there is obviously a loss of motor control, the mentality may be normal though development is retarded.

4. In children whose mentality is near normal, who do not have repeated epileptic seizures, and who do not have athetoid or choreiform movements, the outlook in reeducation is good.

5. This reeducation must be carried out optimistically by all concerned along sound physiotherapy principles.

6. We, as physicians, must be as certain as possible before we make a diagnosis of idiocy and give a hopeless prognosis.

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—O—

THERAPY OF COOK COUNTY HOSPITAL: THERAPY OF ANTHRAX

Bernard Fantus, Chicago (Journal A. M. A., Sept. 22, 1934), considers prophylaxis in animals and man in his discussion of the therapy of anthrax. Under treatment he states that anthrax antiserum should be administered at the earliest possible moment, locally as well as systemically. Systemic administration in nonsepticemic cases is carried out by means of intravenous injections of 50, 100 or 200 cc. of antiserum every twelve to six hours (according to the severity of the case) until the disease is controlled; then intramuscular injections are given for several days longer. In septicemic cases 200 cc. of antiserum is injected intravenously every three hours until the blood culture is negative. Local treatment consists of absolute rest, elevation, and warm boric acid compresses until the eschar separates. No excision or cauterization is necessary. If an abscess forms, mere incision is enough. In properly managed cases the wound heals with a surprisingly small scar.

—O—

R. B. DAVIS CO. COCOMALT

The great strides taken by the medical profession in the last few years in the prevention of rickets can be traced directly to the newer knowledge and understanding of Vitamin D. Because of the discovery of Vitamin D, rickets—once a familiar childhood menace—is now rapidly becoming a rare disease in civilized countries.

Recent experiments prove beyond a shadow of a doubt that the amount of Vitamin D in the dietary of the pregnant woman determines to a large extent the quality of the teeth, the skeleton, and the perfection of form of the coming child. Thus, by the systematic "feeding" of Vitamin D and calcium to the expectant mother it is possible to safeguard the child—and the mother, too—from malformation of the bone structure.

Cocomalt mixed with milk is useful in the dietary of expectant mothers—not only because it has almost twice the food-energy value of milk alone, not only because it provides extra proteins, carbohydrates and minerals (calcium and phosphorus)—but because it is rich in Vitamin D. Cocomalt is licensed by the Wisconsin University Alumni Research Foundation under Steenbock Patent No. 1,680,818. One glass or cup of Cocomalt, prepared as directed, contains not less than 30 Steenbock (81 U.S.P. revised) units of Vitamin D. Cocomalt is accepted by the American Medical Association Committee on Foods.

THE CINCH SHORTENING METHOD FOR EXTRA-OCULAR MUSCLES*

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In writing a paper on the cinch method of shortening, I am not entirely devoid of selfish motives. It has often been said that if one wishes to acquire knowledge of a subject, a good method of procedure is to write about it.

The physiopathology of squint, and its surgical treatment, has always been a subject of unusual interest to me. The numerous hypothesis as to its etiology, and the various surgical procedures submitted for its correction, lead to the belief that the solution of this interesting problem has not as yet been solved.

During the year of 1930-31 I was fortunate in being so situated as to examine, prior to operation and follow through to their completion, over one hundred cases of squint, operated on by the cinch method of shortening. This series included the private cases of my preceptors, and also the clinic cases at Stanford University. Collaborating with my preceptors the details of this series of cases were published in the *Archives of Ophthalmology*, May, 1931.¹

It is not the purpose of this paper to consider the physiopathology of squint. However, the originator of the method stresses a spastic element, that is, a habit impulse of contraction and relaxation according to Sherrington's² law of reciprocal innervation, i. e., stimulation to the center of one movement produces inhibition of the center of the opposing movement.

In this manner explanation is offered as to the different degrees of effect from the same amount of shortening. The advantages of the cinch method of shortening were emphasized by O'Connor³, its originator, in 1916, before the Section of Ophthalmology of the American Medical Association. After ten years of practical application, and additional observation, he presented a paper before the Academy of Ophthalmology⁴, in which he further simplifies the operation and offers improvements, as to the technique.

It is this improved technique I am using. The disadvantages of the procedure, advocated in 1916, have been eliminated. It is simply a tendon shortening, accomplished by splitting the tendon into as many strands as is consistent with the amount of shortening desired. While no attempt is made to convert arc degrees of measurement into millimeters of shortening, approximately one millimeter of shortening is obtained from each medium dermal suture, double looped, dividing the tendon into four equal strands.

McCool⁵ showed, from wet specimens in enucleated eyes, that as much shortening as is ever desirable or safe is obtainable by the cinch method.

Many ardent enthusiastic members of the profession have supported O'Connor in his claim that from a standpoint of efficiency, safety, certainty of action and surgical principles involved, no operation yet devised can compare with it. Some of the advantages he enumerates are: The shortening is permanent and can be accomplished without the disadvantages or risks of other operations. It permits accurate calibration of both tropias and phorias. The sutures are transferred upon alternate counter-pressure in the same plane, the tendon strands being weaker than the sutures are looped around them, thereby constricting the sutures and not themselves. The operation can be performed safely at any age, and in addition eliminates the possibility of over-correction and increase of the original deformity. No binocular bandage is required, and the monocular pad may be removed after twenty-four hours.

In operating the phorias, the immediate effect after operation will be less than the effect on the succeeding day, because of the temporary paresis from pulling. Unless the phoria shows an under correction immediately after operation, do not pad the eye. Encourage the patient to use the eyes as much as possible, in order to prevent the bulbar conjunctiva from becoming adherent to the tendon, thus ex-

*Read before the Section on Eye, Ear, Nose and Throat, Forty-second Annual Meeting, Tulsa, 1934.

aggrerating the effect. The effect of allowing the muscle to make its normal excursions, by not splinting with binocular bandage, prevents the formation of adhesions.

The operation may be combined with a partial tenotomy, or, in older cases, recession may be employed where structural changes are present, or the opponent shows an excess of tonus or contracture. In children, where the operation is most frequently employed, I combine the operation with a central tenotomy of the opponent, in order to cause a temporary paresis and functional loss. A mere stretching would probably accomplish the same purpose.

In all probability central tenotomies, unless pulled against by an advancement, resection or shortening, apparently have no permanent effect. However, when combined with the cinch shortening operation is much more pronounced than if the two operations were performed separately.

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BLUE SCLERA*

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There seems to be a difference of opinion as regards the first reports on blue sclera, but the earliest date mentioned is 1839 when Von Ammon first described this condition. Lobstein is credited first having reported blue sclera in 1841. He also reported the condition of fragile bones in 1833. However, the condition of blue sclera and fragile bones were first reported as being connected in 1896 by Spurway. The two were next reported as being associated in 1900 by A. Eddowes. The sclera is described as being "deep porcelain blue" or "a porcelain or leaden blue" or as a "china blue". The entire sclera is blue, but is most intense toward the anterior portion over the ciliary body. If the blue sclera patient does not die in infancy, longevity does not seem to be influenced by the presence of blue sclerotics.

Three theories have been advanced as the causative factor: First, mesenchymal; second, increase of pigmentation of pigment cells of sclera, and third, increased transparency of the sclera due to lack of fibrous tissue from absence of lime salts. These cases are of interest, but are rarely seen primarily by the oculist. The family physician or surgeon may be consulted

about the patient for the first time when the child suffers a fracture or the parents may discover the sclera is blue and seek information as to the cause of it. It is essential that the pediatrician, the general practitioner, and the surgeon know of the syndrome of blue sclera, fragile bones, and deafness which is otherwise designated as blue sclera, fragilitas ossium and oto-sclerosis. Ruttin pointed out that while fractures occur in childhood, deafness only comes in the adult life. It has been rather definitely shown that at least one parent must have blue sclerotics in order that the child inherit this condition, although there have been a few sporadic cases found where neither parent has blue sclerae. It has also been demonstrated that fifty per cent of the offspring of a parent with blue sclerae will inherit this condition, and that fifty per cent of the offspring of these will have a blue sclera and fragile bones, while those offspring whose sclera are not blue will have normal offspring. In other words, the parent must have blue sclera before the child can inherit the condition. While practically all of these patients have brittle bones and suffer numerous fractures, a very few escape the broken bones, but are susceptible to sprains, strains and dislocations.

Spurway¹ calls attention to the fact that

*Read before Section on Eye, Ear, Nose and Throat, Oklahoma State Medical Association at Tulsa, May 21-22-23, 1934.

Eddowes, in 1900, reported blue sclerotics and fragile bones and states that he, Spurway, had previously, 1896, reported in the *British Medical Journal* the history of three or four generations of a single family with fragile bones, numerous fractures and common symptoms of blue sclerotics.

Constans² reports two cases of blue sclera with brittle bones with a history of fractures in one case and numerous sprains in the other. His conclusion is that blue sclera and fragile bones accompany each other. They may or may not have deafness associated. Also, that it, blue sclera, is only transmitted by a parent with blue sclera and that they may or may not transmit the condition. He does not think syphilis a factor.

Goin³ claims there is a difference between idiopathic osteopsathyrosis and fragilitas ossium, and says they are two phases of the same disease. The non-hereditary form occurs without blue sclera, although he reports one case occurring with blue sclera.

Smart⁴ reports a case of scleritis which resisted or at least responded slowly to all methods of treatment until he had a blood calcium test made and found it very low. Upon placing her upon treatment to raise the blood calcium to normal her scleritis immediately healed. The sclera was a bluish or lavender color, following repeated attacks.

McCable⁵ reports a very interesting case in which the baby at birth had blue sclera and numerous fractures of the extremities in various stages of callus formation showing the child had suffered these fractures in utero.

Knapp⁶ reports a case of a female, age four. In this case the grandmother, aunt, and mother have blue sclera and are the only members of the family affected. One sister is not affected. The patient has blue sclerotics only. No fractures or deafness. Blood calcium high normal. The lids of the right eye are light blue in color. Slate blue color of sclera of right in marked contrast to that of the left eye. Iris dull brown, left eye slightly bluish.

Key⁷ in his paper states that the depth of blue varies in different individuals of the same family. That the ciliary body can usually be definitely outlined and is not due to pigmentation, but to the transparency of the sclera allowing the blue uvea to shine through. Peters thinks the sclera is thinner than normal. Key quotes

from Conlon's paper (*Boston Medical and Surgical Journal*, 169:16, 1913), in which Conlon does not think the sclera is thin, but is transparent or else there would be buphthalmos, which has not been found. Freidenberg thinks the transparency is due to absence of lime salts in the connective tissue. Buchanan (*Tr. Ophth. Soc.* 23:267, 1903; *Ophthalmoscope* 8:685, 1910) examined the eye of Bronson's case and reported the eye normal for a child of that age (11 months). Embryotoxin has been found in a number of cases. Key reports that keratoconus was found in one case, coloboma in one case, cataract in two cases, astigmatism and hypermetropia in six cases. Myopia was found five times. The fundi were normal in all cases and ocular tension was normal. Slight blueness of sclera may be present in anemia, T. B., and certain forms of heart disease. Bronson, Herman, Ostheimer, Hoffman, Gutzeit and others have found sporadic cases of blue sclera and fragile bones where neither parent was affected, and these cases did not transmit to their offspring. Key says that "hereditary hypoplasia of the mesenchyme" is characterized by blue sclera, brittle bones, deformities, small stature, hypermobility of the joints and a weakness of fibrous structures, while "hypoplasia of mesenchyme seems to be an anomaly of development rather than a derangement of metabolism."

Bowcock⁸ and Lewis give a short review of the history of blue sclera and brittle bones and report the case of a girl, age four years, with no family history of blue sclera or brittle bones. The father and mother are living. Exhaustive laboratory and x-ray examinations were made. "The blue color of the sclerae is explained by a majority of authors as an abnormal transparency of the sclerotic coat of the eye which permits the blue uvea to show through." They state that authorities agree that deafness first appears in early life or later. (I am unable to confirm this as to early life.) It appears that liability to fractures becomes less at puberty or as young adult life is reached, often times with spontaneous improvement or total absence of fractures. They summarize as follows: "A sporadic case of brittle bones and blue sclerae is reported. The clinical picture conforms to cases previously described. In addition, an apparently benign glycosuria is present. Serum calcium determinations gave figures at the upper limits of normal or slightly above. Estimation of urine and stool calcium and

phosphorus gave evidence of abnormally high percentages of both in the stool, in such proportions as to suggest the possibility of absorption from the intestinal tract.

Shugrue⁹ and Rockwood report four cases of blue sclerotics, brittle bones and deafness. They state that the disease is hereditary and that the patient may have one, two, or all symptoms, e. g., blue sclerae, brittle bones and deafness; also that where blue sclera alone is present they usually die in infancy, but when the blue sclerae manifest in adolescence they are associated with brittle bones and that later deafness may come on. In the family of Case 1, age 20, male, reported, were seven of twelve with blue sclerotics including paternal grandfather, father, and five of nine children. Father had all three symptoms. One sister had blue sclerae and brittle bones. Two other sisters are deaf. One brother had blue sclera and brittle bones. The serum calcium and organic phosphorus was about normal. Case 2, male, age 47, has three brothers and four sisters, none of whom is affected. He has glycosuria with serum calcium and inorganic phosphorus about normal. Case 3, female, age 52, had all three symptoms. Three generations preceding her had had three symptoms. The father of patient had blue sclerotics and was the father of eleven children, six of whom have blue sclerae. Patient has five children, three with and two without the syndrome. Two with blue sclerae died in infancy. They state: "The most plausible explanation for the cases of blue sclerotics with brittle bones and deafness is that they are caused by a congenital mesenchymal defect, since all the structures involved in the syndrome come originally from the anlage. However, this theory does not explain why other tissues of mesenchymal origin, such as the heart, blood and lymph vessels, bone marrow and lymph nodes, are not usually affected." In Case 4, fifty per cent of the children with blue sclerae transmitted it to fifty per cent of their children. Those children of parents with blue sclerotics that did not inherit blue sclerotics did not transmit blue sclerotics to their children. One of their cases definitely follows the Mendelian law.

In Cleminson's¹⁰ case the iris was brown and sclera greyish-blue. It is for the most part a resume of the literature that had been written previous to this paper on blue sclera, otosclerosis and osteogenesis imperfecta. He quotes Eddowes, who pub-

lished a short paper in 1900 in the "British Medical Journal," who said: "I would suggest that the transparency of the sclerotics indicates a want of quantity or quality of the fibrous tissue forming the framework of the various organs of the body and probably explains the want of spring or toughness in the bones of these peculiar individuals." Cleminson states that "these cases are interesting in that the three constituent symptoms are all due to disturbances in the development of the mesenchyme, from which the bones and fibrous tissues, including the sclerotics, are developed."

Duggan¹¹ and Nanavati's patient was a boy whose father was normal, but the mother and two sisters were affected. The mother's brother and two sisters were affected. The brother who was not affected had three sons who were not affected. Of the two sisters who were affected, each had two girls and two boys, all of whom were affected. The maternal grandmother was affected—she was undoubtedly the starting point. Their contention is that the condition of blue sclerotics is transmitted through affected females and in this instance was dying out in the only male affected, or in other words, the uncle, being only slightly affected, did not transmit to his sons. The greatest depth of color in their cases was about 1mm. from the limbus of four patients examined—the mother, son, and two daughters. The iris was brown in each instance. All of the examined had normal fundi and vision except the boy. His fundi were normal, but he had myopia of a moderate degree. They also report a case of a Multani girl of blonde type who not only had blue sclerotics, but had a blue discoloration of the skin of the lower part of her face on the right side. There were no pathological changes in the skin. She had an adherent leucoma of right eye. There were no other members of family affected. She was born with this condition of the skin. They did not find any evidence of fragilitas ossium, deafness, or congenital syphilis in the girl.

Colonna¹² reports nine cases of osteogenesis imperfecta, their ages ranging from three days to twenty-five years. The younger the patient the lighter blue in color is the sclera, while the older the patient the darker blue prevails. "The etiology of osteogenesis imperfecta is unknown. In some of the cases reported there is a familial tendency * * * Endocrine disturbance have been thought to be

a cause, but no definite data can be advanced to substantiate this, although several writers are impressed with the possible role of the parathyroid as a causative factor. Severe trauma occurring late in pregnancy, amniotic bands and intra-uterine adhesions have all been mentioned by various writers as predisposing factors, but as yet definite proof is lacking. Syphilis definitely does not seem to be a factor."

Oast¹² reviews in detail the literature and cites the case of the "Oxford family" as studied by Stobie, which included sixty-six individuals, covering five generations, in which he shows that there is no instance in which a generation has been skipped.

Gleich¹³ says: "Osteogenesis imperfecta appears to be a fetal or embryonal disturbance due to faulty mesoplastic tissue. This tissue, in turn, owes its poor quality to defects in the hereditary units (the chromosomes) of the parents' germ-cell." He reports four cases in one family in which there were no blue sclerotics.

Joachim and Wasch¹⁴ saw eight cases of fragilitas osseum in one family covering three generations, and have been able to trace the disease in five generations. They report three of these cases, one a female, age 42, with blue sclerotics, who all her life had been subject to sprains of her hands and feet from the slightest cause, and once broke her thigh from tripping. Her daughter, age 9½, had her first fracture at five weeks while being lifted from the bath tub. In all, she had eighteen fractures. The sclerae are blue. A niece of patient No. 1, age 13, had her first fracture at eighteen months of age. She had numerous fractures. She also had blue sclerae.

Ryan¹⁵ reports two cases of osteogenesis imperfecta which were treated apparently successfully by the administration of thymus gland by mouth. In one case there were blue sclerae, while in the other there was no history of sclerotics in the family.

The father of a family in Oklahoma, about whom I have heard but not seen, writes me as follows: "In regards to my son, his eyes have a bluish cast, vision is good, although he has granulated eyelids. My other children's eyes would be called blue; however, they all look exactly alike. My eyes are blue (I mean the whites). My wife is dead. I don't remember, but think her eyes were white. As to relatives, I cannot tell you much about them, but

on his mother's side they have had quite a few broken bones, there being one boy who is worse than my son (this son had had numerous fractures before he was 9 years of age). My oldest son was as bad as this one, but he is dead and don't remember about his eyes."

This boy has been a patient in one of our hospitals on three different occasions because of fractures, with a diagnosis of fragilitas osseum.

A letter from Dr. Chas. F. Clayton, of Ft. Worth, Texas, as follows: "* * * with reference to the case of osteogenesis imperfecta, about which you inquired, this child is now in the hospital recovering from his forty-second fracture. Neither he nor any member of his immediate family have blue sclerae. I am not able to determine whether any relatives farther back had this condition or not. Another cardinal sign of this condition which is absent in this case is wormian bodies in the skull." This is probably a sporadic case without blue sclera,

Henderson¹⁷ reports a case of fragilitas osseum about whom he wrote me as follows: "We do see blue sclera in fragilitas osseum in varying degrees. In the case of the patient whom I report in the proceedings, I did not give a full history, but he did have a moderate degree of blueness of the sclera."

In April of 1933 I saw a little girl, age 5, who has china blue sclerae. An examination of this child showed her vision normal, fundi and tension normal. The greatest depth of blue was about 1 mm. from the limbus. The iris is gray-blue. There is no history of fractures or sprains. Her brother, age 3, has white sclera and brown iris. The mother does not have blue sclera. The father has blue sclera (a heavier shade than that of the daughter) and gray-blue iris. The father said that before he was twenty years of age he had "fractured every bone in his arms and legs," but had had no fractures since that time. There are no deformities of either limb. He gave as an explanation of the fractures that his mother said it was caused by giving him so much quinine in infancy for malaria. There is no history of blue sclerotics insofar as I can determine from an examination of the father.

TREATMENT

There is no line of treatment which can be said to have any great influence on fragile bones. Everything has been tried with little or no success. Thymus gland,

parathyroid, x-ray, diet, calcium gluconate, calcium lactate, different rays, and many, many other drugs, but with no lasting benefit.

Since the bones may and do fracture with the least possible violence, babies break their leg or arm turning in their crib, or children may break a femur from lightly bumping into a chair, preventative treatment has done more than anything else to care for these patients. It is essential that early in life they be taught how to care for themselves and thus prevent so many fractures.

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TREATMENT IN POST-OPERATIVE ILEUS*

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My purpose in selecting this subject is to present to you some of the newer methods of treating the post-operative complications of abdominal surgery and particularly intestinal surgery. We need no longer have fear in our hearts for post-operative ileus. Our patients can be relieved to a large extent of the dreaded post-operative gas pains. In general peritonitis, we need no longer have a mortality of eighty to ninety per cent. This can be reduced by at least one-half.

Recently Rosser stated that 4,000 people in Germany died yearly from post-operative ileus. Sir Frederick Trevis wrote late in the last century that 2,000 people died in England every year from this cause. It is reasonable to assume that no less than 5,000 deaths occur annually in the United States from this complication.

There are several factors in the cause of post-operative ileus: First, in elective

cases where no attention has been paid to the preoperative care. A little attention at this very important time will greatly reduce the percentage of this complication. Limiting the diet of the patient before operation to carbohydrates with low protein intake will aid markedly; this is especially true of gall bladder surgery where high glycogen reserve is required in the liver. Second is the anesthetic. In this regard it is well to bear in mind that inhalation anesthesia causes a toxic effect on the general system. In selecting an anesthetic it is necessary for the surgeon, after studying the case, to use his better judgment. A great aid in the operative technic for the prevention of ileus has been developed in recent years by the use of spinal anesthesia. The relaxation from this renders the operative procedure less difficult and minimizes the shock. The safety of spinal anesthesia as compared with general anesthesia is also highly desirable; as time has progressed, mortality

*Read before the Section on Surgery, Forty-second Annual Meeting, Tulsa, 1934.

has been reduced to the minimum. It has been truthfully said that spinal anesthesia makes a skillful surgeon out of a clumsy one. Less trauma is produced; it takes the place of one or more assistants. The pathology in the abdomen can be more readily located and removed; you can get in quickly and out quicker, and this, of course, is to the best interest of the patient. The third cause of ileus is what the surgeon does after he opens the abdominal cavity, the length of the operation, the amount of trauma the intestines have to undergo, and the exposure to which the viscera have been subjected. Fourth, infection is no doubt a common cause and, in my opinion, perhaps the most frequent cause of post-operative ileus.

The usually accepted treatment, until recently, consisted of enemas, rectal tubes, gastric lavage, heat to the abdomen and occasionally pituitrin. We treated the symptoms; we disregarded the physiological changes which take place in the fluids and tissues of the body as a result of the obstruction. No wonder our mortality, according to Deaver, Ross, Kirschner, and others, remained at the high point of twenty-five to fifty per cent.

Most of the articles in our surgical journals deal with the modification of older methods or with new surgical procedures. Patients should be given more time and study and pre-operative preparation. If we followed a planned physiologic and biologic preparation a surgical procedure with a high mortality could often be changed to one of comparative safety. Progress in general surgery will be made only when the surgeon realizes and appreciates the importance of the chemical changes which take place in the body as a result of damage from surgical intervention and anesthesia. There will be an increasing interest in the cause and prevention of post-operative complications, especially the chemical changes which take place in the blood. It will be more fully understood that traumatized tissues repair more readily when kept at rest. Greater attention will be paid to pain and nervousness and the importance of maintaining the acid-base balance in the prevention and treatment of disease. Progress in this direction has been so rapid that a new field may be said to have opened to the clinician based on a greater knowledge of the chemistry of the body.

In health the reaction of the blood and tissues of the body are preserved at a very constant level. Wide variations from

the normal are incompatible with life. Any condition which disturbs the natural physiological processes of the body will disturb this physiochemical reaction and produce an acid-base imbalance, that is, produces either a pathological alkalemia or an acidemia. The reaction of any fluid depends upon the relative number of hydrogen and hydroxyl ions. If there is an excess of hydrogen ions, the solution is acid, and if the hydroxyl ions are in excess, the solution is alkaline. When we use the term acidosis, we mean there is an excess of the hydrogen or acid ions; in alkalosis, the excess is in the hydroxyl or OH ions.

Recent work of Dr. Thomas G. Orr and his associates has thrown a great light toward an intelligent understanding of the changes which take place in intestinal obstruction, not alone in the bowel but throughout the entire body, particularly in the blood. Regardless of the original cause of the ileus, whether some sort of trauma to the bowel or a low grade infection, an adynamic condition exists with loss of muscle tone and absence of peristalsis and the bowel in turn becomes distended. Even now, the fact that ileus is not the cause of death, is not fully appreciated. We believe, as do others following the work of Orr, that death is due to a disturbed chemistry. With the development of ileus certain changes take place within the body. The first and perhaps the most important is the rapid dehydration. It is necessary to realize that in the normal intestinal tract there is a continuous process of excretion and a reabsorption of fluids. Rountree has tabulated the quantity of secretions entering the intestinal tract in twenty-four hours to be from 7,500 to 10,00 cc. This is two or three times the quantity ingested by mouth and three to four times the quantity secreted as urine and about twice the total volume of blood. It can readily be seen that any lesion of the intestinal tract which prevents reabsorption of such a large quantity of fluids and elements will result in a serious loss of the essential constituents of the body.

Probably the next most important change is the loss of chlorides in the body. This has been recently proved, as you know, by the extensive study of blood chemistry in these cases. Hartwell and Hauget, in 1912, first noted that the lives of animals with intestinal obstruction could be prolonged by giving salt solution; they gave credit to the water and overlooked the importance of the salt. Sodium

chloride is essential in maintaining the acid-base balance, in the water distribution, in the formation of HCl in the gastric secretions and in maintaining muscular tone; also, according to Fleming, the bactericidal power of the blood is influenced by the salt content. Life began in the sea; the first and most essential elements were water and salt; life cannot exist without a proper balance of these elements. With the two previously mentioned systemic changes in the physiology of the blood may be mentioned an increase in the non-protein nitrogen. The appreciation of these facts indicates a specific therapy which, when applied, will be a great aid to us in the treatment of post-operative ileus.

There is no therapy so logical as that which has to do with the substitution in the body of elements that are lost by and during the course of a disease. In the treatment of intestinal obstruction the restoration and maintenance of the water and salt balance is fundamental. Orr has shown that glucose solution or distilled water has no effect on the progress of intestinal obstruction so far as the restoration of water and chemical balance is concerned. This is also true in post-operative ileus. It is reasonable to believe that a normal balance of water and salt should be maintained. In ileus there is a great loss of fluid from the body by vomiting. The fluid is secreted in the intestinal tract and is regurgitated into the stomach. Due to the condition of the intestine, no reabsorption takes place and the stomach becomes distended with fluids which have a high chloride content. Vomiting occurs with loss from the body of these two essential elements. The physiological changes which accompany the over-distention of the stomach and the small intestine are the chief dangers in paralytic ileus. Sodium chloride, when given as a hypertonic solution, in addition to replacing water and salt, stimulates peristalsis and will aid in the return of normal tone to the bowel.

Another very important aid which we have at our command is the intelligent use of morphine. Many believe that morphine slows peristalsis; probably the basis of this is the fact that in dysentery paregoric is the one drug par excellent. However, in this case, the opiate is given per orum. Morphine given hypodermically does not have this effect; rather, it stimulates peristalsis. The action of the same drugs given per orum or given hypoderm-

ically may vary greatly. Probably one of the best examples of this would be the oral administration of magnesium sulphate; in this we have a dehydrating effect. However, when this drug is given intravenously, we have an entirely different effect; the action is mainly on the central nervous system, antispasmodic, and lowers the blood pressure. Many other examples to illustrate this point might also be given. The patient with ileus is nervous, restless, and anxious, and morphine is the one drug to relieve these symptoms.

Another very important aid for the relief of distention is the use of the indwelling Rehfuß tube, or duodenal tube. Matas, in 1924, made the observation that "by draining the stomach the gastric tube acts in reality as an artificial anus which empties the upper intestine." Drainage of the stomach and duodenum is now recognized as an essential part of the treatment of abdominal distention. Whether a Rehfuß tube or Levine tube is used, is immaterial, but in either case it should be passed into the stomach and left in place as long as needed. The stomach should be aspirated frequently. The patient may be permitted to drink water ad libitum. Constant siphonage prevents over-distention of the stomach.

Ileostomy as an additional procedure in relieving ileus has little to offer. In a large series of cases of intestinal obstruction of various groups at Mt. Siani Hospital, New York, enterostomy was done in forty-one cases of acute mechanical ileus and twenty-one cases of paralytic ileus. The mortality following enterostomy in the dynamic group was 70 per cent and in the adynamic group 80 per cent. This is a fearful mortality.

I have established in my practice, where paralytic ileus is present or where I suspect an ileus may develop, the following regime: Enough morphine to keep the patient quiet and free from pain. I give, within twelve hours after operation, salt solution. It is of utmost importance to give intravenous solutions very slowly to avoid speed shock. Reactions rarely occur when intravenous therapy is given slowly. For practical purposes, I require at least one hour to give 1000 cc. of hypertonic salt solution; 500 cc. of 5 per cent in one to one and one-half hours; and 200 cc. of ten per cent solution in one hour. I find that the average case requires 3000 cc. of hypertonic solution every 24 hours. If too much sodium chloride is given, edema may

appear, first in the ankles, later a general anasarca may occur. It is better to give too much salt than not enough. Where the dehydration is not marked and when dealing with a paralysis of the bowel, less water can be given, but the percentage of salt should be increased to 10 per cent. The advantage of this is to increase the tone of the bowel and also to overcome hypochloremia. For post-operative gas pains 50 cc. of 10 per cent solution given with a large syringe will give immediate relief.

The question often arises when to give salt solutions and how much salt to give. Those of us who are privileged to have a laboratory at hand where blood analyses may be made, should have this done frequently. The blood chlorides should be kept well within the normal limits. If the blood chlorides are up to normal, then normal salt solutions can be given. If the chloride content of the blood is low, then the stronger solutions are indicated.

SUMMARY

1. Patients do not die from ileus or as a result of absorption of toxins, but they die as a result of the chemical changes which take place in the blood and tissues after ileus develops.

2. Recovery depends upon a careful estimate and correction of the water loss and chemical imbalance.

3. Glucose solution or distilled water have no effect upon the progress of intestinal obstruction as far as restoration of water and chemical is concerned. Sodium chloride is a necessity in the maintenance of chemical balance.

4. Control of water, chemical, and metabolic balance, prevention of over-distention by the decompression tube, conserving the patient's strength with morphine, and stimulation of bowel tone are the essential factors used in maintaining the patient's resistance while he is overcoming the disease.

DISCUSSION

Dr. Kuhn: I consider this a very important paper. It seems to me that somebody should have something important to add to this paper.

Dr. A. C. Hirshfield, Oklahoma City: I think this paper is of the utmost importance. A great deal can be said, but there is not much to be added to Dr. Niemann's very thorough discussion of the subject. Two thoughts occurred to me about the prevention and treatment of ileus. I believe that surgeons who operate against

the clock have more ileus than those who do not. In other words, the man who tries to make time merely for record has more ileus than the man who takes more time and works more gently. In other words, careful and gentle handling of the intestines is of more importance to the patient than five or ten or fifteen more minutes of operative time. I do not mean to take half a day for the operation, of course, but I do believe that hurrying is responsible for a good deal of ileus. So much for that. Our use of salt solution post-operatively, I think, has gone a long way towards the elimination of post-operative ileus. We use it routinely almost altogether, in mild cases under the skin, in severe cases intravenously, and in practically all cases by rectum as long as it can be used without discomfort to the patient. In more than average distention, I believe that adequate drainage of the stomach and duodenum by use of the nasal duodenal tube will go a long way toward reducing post-operative ileus. In fact, since we have used this method we have not had to do any post-operative enterostomies.

Dr. Kuhn: I was hoping that someone would describe in addition to the drainage tube, the suction method by hypostatic pressure from the bottle which is a little refinement in continuous drainage.

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SHOULD COD LIVER OIL BE FLAVORED?

It is a well-known fact that young infants shy at aromatics. Older patients often tire of flavored medications to the point where the flavoring itself becomes repellant. This is particularly true if the flavoring is of a volatile nature or "repeats" hours after being ingested. Physicians have frequently used the term "fresh," "natural," "sweet," and "nutlike" in commenting upon the fine flavor of Mead's Cod Liver Oil. They find that most patients prefer an unflavored oil when it is as pure as Mead's.

Physicians who look with disfavor upon self-medication by laymen are interested to know that Mead's is one Cod Liver Oil that is not advertised to the public and that carries no dosage directions on carton, bottle or circular. Mead Johnson & Company, Evansville, Indiana, U. S. A., Pioneers in Vitamin Research, will be glad to send samples and literature to physicians only.

REPORT OF PERSIMMON BEZOARS OCCURRING AROUND TULSA, OKLAHOMA*

H. D. MURDOCK, M.D.
TULSA

The word, bezoar, is derived from the Persian compound padiseher, corrupted into bedzohr, and bezoar. It means antidote, or expeller of poisons. It is applied to masses found in the intestines and stomachs of men, animals, birds and whales. They were known in the 12th century B. C., and were officially described and admitted to the first London Pharmacopoea.

Bezoars were worn as amulets by the superstitious, who have sometimes purchased a single one from the East for six thousand livres (twelve hundred dollars) when very fine, and rented them in Holland and Portugal occasionally at a ducat a day. From the supposed value of bezoars in medicine, they were at one time imitated and the false ones sold as genuine. These suppositious stones were compounded of lobsters' claws and oyster shells, and formed into balls of the shape of bezoars. The stones found in the stomachs of roosters were also given publicity as desirable amulets, as they assured the possessor health, strength, wealth and bravery.

Oliver Wendell Holmes, in his Medical Essays, states: "Governor John Winthrop, the first, sends for East-Indian bezoar. Governor Endicott sends him one he had of Mr. Hunfrey. I hope it is genuine, for they cheated infamously in the matter of these concretions."

In the inventory of Queen Elizabeth's crown jewels, made at the ascension of James I, there is this item:

"Also one great Bezar stone, set in goulde that was Queen Elizabeth's, with some Unicorne's Horn, in a paper; and one other large bezoar stone, broken in pieces, delivered to our owne hands, by Lord Brooke the two and twentieth day of Januarie, one thousand six hundred and twenty two."

Queen Elizabeth, like most people of her time, made no secret of her superstitions, for they were the accepted beliefs. To

ward off disease she wore suspended from her neck a piece of gold engraved with mystical characters and her bezoar stones were her infallible antidotes against all poisons. It was a very useful medicament in those bygone days when the art of poisoning was highly developed. In cases of suspected poisoning the bezoar was swallowed and recovery was assured. If the bezoar failed, the explanation was simple—the patient died of something else.

In human beings we find bezoars composed of hair balls, concretions and vegetable material. Among the concretions we have, shellac, bismuth, and salol. Masses of each of these concretions have been found in the intestinal tract. Shellac bezoars are found in the stomachs of painters who have been drinking alcoholic solutions as a stimulating beverage. Bismuth has been found following its use for roentgenographic study. One mass, weighing 40 grams, of pure bismuth was found in the stomach. A mass of crystalized salol, 5 centimeters by 3 centimeters, was found in the stomach of a Turk. In the case of Margaret Lauer, reported in Good Study of Medicine in Boston, 1823, stones were formed in great abundance in the intestines; upon pressing on the abdomen there was a rattling like the sound of a bag of marbles. In a horse that had been fed largely on bran, a bezoar was found, weighing 15 pounds, 2 ounces, and 8 inches in diameter.

A gray, wax-like substance called ambergris is found in the large intestines of diseased sperm whales. Some of these masses are discharged from the intestines and found floating on the water. Ambergris is usually loaded with hard, bony fragments of the beaks of cuttle fish, on which whales are known to feed. The largest single piece of ambergris known to whaling annals was found in the interior of a whale by Captain James Earle, of New Bedford, Mass. It weighed 789 pounds, and was sold in chunks in various markets of the world for \$100,000. Ambergris now is worth about \$80.00 an

*Read before Section on General Surgery, Forty-second Annual Meeting Oklahoma State Medical Association, Tulsa, May, 1934.

ounce. A large quantity was found on the California coast this past winter. Ambergris has been used for centuries in the sacerdotal rites of the church, and with fragrant gums was frequently burned in the apartments of royalty. To some extent it was employed as a medicine and also as a flavoring extract. Nowadays it is utilized almost exclusively by perfumers in the preparation of fine scents.

Some madstones are undoubtedly bezoars. Madstones are vegetable substances or stones which when applied to a wound caused by the bite of a mad dog are said to prevent hydrophobia. Sir Walter Scott, in "The Talisman," mentions one which has been religiously preserved as one of the most valuable relics of the age. The Pall Mall Gazette, of London, in January, 1874, described a madstone in this fashion: "Eleven hundred applications of the stone have been made to mad-dog and snake wounds, without a single failure to cure."

Bezoars are composed of vegetable materials; the stems, skins, fibers, seeds and other debris may be included. Quain, in 1854, reports the first recorded case of phytobezoar, a mass composed of string and cocoanut fiber.

Three men, during the late war, ate a diet of greens, couch grass, parsley, mallow roots and wild beets; there formed in the stomach of each of these men a bezoar which was removed. Pumpkins, raisins, prunes, celery, persimmons and bran are the common cause of bezoars.

Persimmons are the only cause of bezoars I am able to report around Tulsa. Fresh ripe persimmons lend themselves to form bezoars, their pulp containing 14% gums and pectin. A quantity of fresh persimmons is probably pressed in a mass immediately after entering the stomach, and this is soon compressed in a solid mass, remaining in the stomach until it either breaks up or is removed surgically. There ought to be many cases annually of intestinal disturbances caused by a mass of persimmons.

The persimmon belt extends south from Massachusetts, New York, Northern Ohio, Indiana, Illinois, and Kansas. Kansas, Oklahoma and Texas are the western limits of the trees.

Dr. Balfour, Rochester, Minn., in the American Journal of Surgery, May, 1929, Dr. W. E. Hart, Decatur, Ill., in the Journal of American Medical Association,

June, 1923, Good's Study of Medicine, Boston, 1823, all have articles on bezoars. There are also many other reports.

Case No. 1: A man 40 years old, in November, 1929, about 11 o'clock at night while out coon hunting ate a large quantity of persimmons. The next day he vomited occasionally and following this he had abdominal pain for two weeks. His stomach never was normal after eating the persimmons and he complained of a "drawing" sensation in the stomach. For the past three weeks he had many cramp-like pains in the upper abdomen, slight relief was experienced when he ate. He could feel a hard movable mass in the region of the stomach. He had gained five pounds in weight in the last year. I saw him first October 20, 1930, eleven months after he had eaten the persimmons. This man had a firm, non-sensitive, smooth, mobile mass about 5 inches long that could be easily felt in the region of the stomach. I had him x-rayed by Dr. M. B. Lhevine and the following is his report:

"The food passes through the esophagus freely. The stomach is large. There is visualized a large mass, situated freely within the stomach cavity. The mass is not attached to the stomach wall. Upon ingestion of a small amount of barium, the barium spreads over the mass as 'glazing over a cake,' presenting further evidence of the mass being free in the stomach. The stomach wall is movable and pliable with no evidence of any infiltration. Upon further ingestion of the barium, it passes along the lesser curvature into the duodenum with no evidence of any pylorospasm. The pylorus opens immediately into a normal duodenal cap. The x-ray film reveals a finger print deformity in the central portion of the stomach, between two and a half and three inches in length. The mass persists in the stomach in the subsequent two and a half hour examination. The mass is irregular in shape, occupying the entire stomach space. The seven and the twenty-four hour examination reveals nothing abnormal, with the exception of a spasticity of the colon.

"Resume: Because of the mass lying free in the stomach, with no evidence of any involvement of the stomach wall, and because of the definite history given by the patient, of eating persimmons some months ago, we come to the conclusion that this patient suffers from a persimmon ball, otherwise known as a phytobezoar."

On November 18, 1930 (one year after

the original ingestion of persimmons), during the meeting of the Oklahoma State Medical Association in Tulsa, I removed a firm, black, banana-shaped bezoar composed of persimmon seeds and skins, from the stomach, which measured 22 centimeters long along its greater curvature and 14½ centimeters in circumference, weighing one pound. The patient had an uneventful recovery.

Case No. 2: Dr. J. B. Lampton and Dr. W. P. Longmire report that in the latter part of October, 1922, one Sunday afternoon, a boy four years old ate persimmons and swallowed the seeds. That night he suffered much upper abdominal pain and began to vomit. Two lumps were located in the upper abdomen, apparently in the stomach. The vomiting increased and the family called in a chiropractor who failed to relieve the patient. On Tuesday a gastrotomy was done; in the stomach were two masses of persimmon seeds and skins; one mass two inches in diameter, cone-shaped and tightly wedged in the pylorus; a second oval mass three inches in diameter was present. The patient made an uneventful recovery and left the hospital on the tenth day. The previous diagnosis was intestinal obstruction.

Case No. 3: Dr. J. C. Lowe reports that in the spring of 1920 a boy ten years old was brought into the hospital. He complained of vomiting and epigastric pain; he had lost much weight. An x-ray was taken and a diagnosis was made of sarcoma of the stomach. The stomach showed a filling defect and a mass could be easily felt. He was transfused twice, and at the operation a mass of persimmon seeds and skins measuring three inches long and one and a half inches in diameter was removed. The patient made an uneventful recovery.

Case No. 4: Dr. R. V. Smith reports that late in the fall of 1902 he treated a boy eight years old who was very ill, had abdominal distention, and a palpable, sensitive mass was in the lower left abdomen, which resembled an appendiceal abscess; this proved to be an abscess; it was drained, and in it were many persimmon seeds and skins. This had evidently been a persimmon ball which had disintegrated. The patient recovered.

Case No. 5: Dr. Ross Grosshart reports that in the spring of 1913 he saw a man 22 years old, who had a palpable mass in his stomach. He complained of indigestion. He was x-rayed and a foreign body

was diagnosed in the stomach. At the operation a mass of persimmon seeds and skins was removed. The mass was oval, three inches long and two inches wide. The patient had an uneventful recovery.

Case No. 6: Dr. A. V. Emerson reports that in May, 1922, he saw a woman 55 years old who complained of "colicky" abdominal pain for the past six months. She was taken acutely ill with severe abdominal pain while riding on a wagon. She consulted a doctor who gave her a physic; the next day another doctor gave her much physic, including croton oil, with no results; on the third day she was sent to the hospital with a diagnosis of intestinal obstruction. At the operation there was found a smooth, hard, oval mass one and a half inches in diameter, eight inches above the ileocecal valve, containing persimmon seeds and skins, which was removed. The patient died the next day, as the result of intestinal obstruction and too much physic.

Case No. 7: Dr. M. A. Houser reports that in 1920 he saw a man 40 years old who had been ill four months. He had eaten a large quantity of persimmons while out hunting. Shortly afterwards he had nausea and epigastric pain. A pre-operative diagnosis of carcinoma of the stomach was made; a palpable tumor could be felt in the stomach; no x-ray was taken. At the operation a mass five inches long and two and a half inches in diameter, of persimmon seeds and skins was removed. The patient recovered uneventfully.

Case No. 8: Dr. A. W. Pigford reports that in October, 1929, he saw a woman 61 years old, who, on October the 24th had eaten about twenty-four persimmons and that night she began to have a dull epigastric pain accompanied with nausea and salivation. Two days later she consulted Dr. Pigford. She had a four-inch palpable mass in the region of the stomach which apparently extended towards the left hypochondrium. She improved, but on October 30th she became worse and was sent to the hospital. Her stomach was x-rayed by Dr. Leon Stewart who reported the presence of a freely movable mass in the stomach, which he believed was a phytobezoar. On November 4th an oval, green, firm mass three inches in diameter was removed from the stomach, which contained the remains of persimmons. The patient had an uneventful recovery.

Case No. 9: Dr. D. L. Garrett reports

that in 1928 he saw a man 42 years old who complained of epigastric discomfort, worse one hour after eating. He felt as though there was a lump in his stomach, and that something seemed to block the passage of food. The patient stated that he had eaten freely of persimmons while hunting. An x-ray revealed a freely movable mass in the stomach. A diagnosis of phytobezoar was made. At operation a black, cylindrical mass nine and a half centimeters by four and two-tenths centimeters, weighing 68 grams, was removed. Patient had an uneventful recovery. This case was reported in the Oklahoma Medical Journal in 1928.

Case No. 10: Dr. A. D. Davis reports that in November, 1907, he saw a man who had been horseback riding for several hours, and during that time had eaten some fresh persimmons. Shortly after this he complained of epigastric pain with nausea; a mass could be easily felt in the region of the stomach. His stomach was washed out several times; at one of these times fragments of persimmons came out. The patient became emaciated and on January 2, 1908, a gastrotomy was done and a mass of persimmon seeds and skins two and a half inches in diameter and five inches long was removed from the stomach. This case was reported at the Frisco Railway meeting at that time. The pre-operative diagnosis was mass of persimmons in the stomach. This diagnosis was, of course, made after the washing out of the persimmon seeds at one time. The patient made an uneventful recovery.

Case No. 11: Dr. Ralph A. McGill reports that in December, 1929, he saw a man 55 years old who had gone hunting in November, 1929, and had eaten a large quantity of persimmons. That night he had nausea and epigastric pain and took a physic. He was sent to the hospital in December, complaining of a fullness in his stomach, and he could only eat a small quantity of food; a mass could be easily palpated in the region of the stomach, which felt about five inches in diameter; he was x-rayed at the Morningside Hospital and a movable mass was easily demonstrated in the stomach. A diagnosis was made of phytobezoars. At the operation a mass of dried persimmon seeds and skins, five inches long and two and a half inches in diameter, was removed. Patient had an uneventful recovery.

Case No. 12: Dr. Ralph A. McGill reports that in March, 1930, he saw a man 45 years old who was a painter. He com-

plained of much abdominal pain, constipation, nausea and vomiting; had all the indications of intestinal obstruction. A diagnosis of this was made. On March 19th, eight inches above the ileocecal valve, a moderately firm mass, one and a half inches in diameter, was broken up, which immediately relieved the obstruction. In the stomach was a two-inch, oval mass of persimmon seeds and skins, which was removed. Patient recovered.

Case No. 13: Dr. Fred Woodson, formerly at the State University Hospital, states that on January 16, 1932, a farmer 28 years old entered the hospital complaining of pain in the abdomen, with constipation and vomiting. Forty-five days before he had eaten a large number of persimmons; the next day he had a burning pain in the epigastrium followed by pain in the lower abdomen, and later by general abdominal pain. He was not confined to bed, but was never well and only worked part of the time. He had been having attacks of pain beginning in the right upper quadrant, radiating into the chest and down both sides. He had lost forty pounds in weight. On January 14th he had severe cramping abdominal pain requiring morphine and chloroform for its relief. He soon began vomiting material which later became fecal in character. He entered the hospital two days later; patient was desperately ill; had continuous nausea, and at frequent intervals vomited large quantities of material with fecal odor. The abdomen was markedly distended and he was extremely sensitive over the entire abdomen, with muscular rigidity. R.B.C. 5,000,000, W.B.C. 7,750, Poly's 92%. At operation on January 17, 1932, a perforated ulcer in the lesser curvature of the stomach was found, through which much fluid was draining. The ulcer was cauterized and sutured; patient was drained. He did not do well and died on February 2, 1932. A necropsy revealed a perforation of the previously repaired gastric ulcer with general peritonitis. In the stomach was a freely movable, black, slightly crescent-shaped mass, four and a half inches long and two inches in diameter, which was composed of persimmon seeds and skins. This was not noticed during the operation on account of confining the surgery to repair of the perforation. A diagnosis of persimmon ball accompanied by some acute lesion in the abdomen, had been made before the operation.

Case No. 14: Dr. James Gilbert saw a man who had eaten persimmons in the fall

and complained of discomfort in the upper abdomen. He was x-rayed and diagnosis made of a persimmon ball. He was operated in February and a four-inch mass of the remains of persimmons was removed from the stomach. He recovered.

Case No. 15: Dr. James Gilbert reports a second case in a man who came into the hospital with a diagnosis of intestinal obstruction. Upon operation a small bezoar was found eight inches above the ileocecal valve. This was crushed by hand, and relieved the obstruction. From the stomach was removed a second persimmon ball three inches in diameter. The man recovered.

Case No. 16: Dr. W. T. Trainor reports that in May, 1933, he saw a man 70 years of age who had taken sick with severe diarrhea, accompanied with abdominal pain, nausea and some distention. He was sent into the hospital and a one and one-half-inch mass of the remains of persimmons was found just above the ileocecal valve causing an obstruction. The man did not recover.

DISCUSSION: *Dr. LeRoy Long*, Oklahoma City:

This is an interesting composition by Dr. Murdock, and calls attention to the disturbances that take place in the gastro-intestinal tract due to foreign bodies. I think I shall limit my brief remarks to foreign bodies in the intestines, although the majority of these cases reported, I believe, were foreign bodies in the stomach. I have not seen any of these cases in my own work that I could blame on persimmons. I saw one case in the operating room of Dr. Carson of Shawnee about eighteen months ago—a young man. I saw him when he operated. A mass was removed from the ileum which produced complete obstruction, and Dr. Carson told me afterwards that investigation showed it was due to persimmons, and he got a history of the patient having eaten persimmons.

I had a peculiar case of foreign body in the gastro-intestinal tract in which the patient, a young woman, had eaten honey with the comb and green corn. That was a peculiar mixture but she liked it. When I saw her she showed evidence of a complete intestinal obstruction. A mass made up of honey and green corn had accumulated in the ileum and produced complete intestinal obstruction.

I had another case, an elderly woman, who gave a history that indicated incomplete obstruction from the symptoms. Finally the symptoms became more pronounced and when she was brought to the hospital she had a complete obstruction. When she was operated a mass was found made up of homogeneous material, probably an accumulation of fecal material, that was in the ileum and had blocked it completely. There was complete occlusion of the ileum and of course complete obstruction.

I think this paper is important because one must keep in mind with symptoms indicating an intestinal obstruction, that it is possible to have such an obstruction produced by a foreign body of some kind.

Just one more remark in connection with peculiar cases: I saw a man who was dying of intestinal obstruction. The autopsy showed an obstruction of the large bowel. He had been in the habit of taking bran to get bowel movements. There was a carcinoma of the large bowel, and above that a plug of bran had accumulated, which produced a complete obstruction.

Dr. J. A. Walker, Shawnee: This especial problem is entirely new to me, but some years ago I had a condition similar to this in a boy. I was called down in the south end of the county one night, and I went out and found this boy about eleven o'clock at night in his home. The abdomen was distended, and he gave a history that he was out in a pasture and fell into a ditch about ten feet deep, and he got out and came home and finished doing up the chores, and then got sick. His father gave him a couple of C.C. pills and salts, etc., and he promptly threw all that up. They called me and I took Dr. Baxter with me and we landed at the home about eleven o'clock at night, and there was this desperately sick boy. They didn't have any light to speak of, but the doctor happened to have an acetylene light and when we lighted the doctor's light all the flies within three hundred miles came into the house. We didn't have anything along to smear on the boy's belly, but we found hanging on the wall about an ounce of tincture of iodine and we smeared that on the boy's abdomen and anesthetized him after telling the father that there was nothing to do except operate, and we didn't want to do that. We laid him up on the kitchen table and went ahead. Dr. Baxter said: "Here is our kink," and over on the right side there was an enlargement

and completely obstructed bowel. We picked it up, and there was the intestine perfectly occluded, about twelve or fifteen inches above the ileocecal valve. We got that open and there was a rock about as big as a golf ball, or maybe a little larger. About eight inches above this there was another obstruction, and we slipped that down to the same hole and dropped it out. The boy got well and seems to be well yet.

Dr. Kuhn: He must have absorbed those rocks when he fell in the ditch.

Dr. Walker: I think that fecaliths may be had accumulated in the stomach and by this jar they might have gotten away and started down the intestinal tract and caused obstruction.

Dr. J. G. Breco, Ada: A number of years ago I had a cowboy who had eaten a bait of persimmons. He made the rounds of about four doctors. They each gave him a round of calomel, and it was eight days from the time he ate the persimmons until his bowels acted. He came to me, gave me the history, and I decided it was a rectal strangulation. I got him on the table and used cocaine and then used my fingers. I worked out at least a quart of persimmons and persimmon seeds from the rectum. He had complete closure, and it was eight days after he had eaten the persimmons.

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THE PRACTITIONER OF THE FUTURE

James B. Herrick, Chicago (Journal A. M. A., September 22, 1934), points out that whether a physician is to be successful depends in a measure on his native endowment and to some extent on chance. The possessor of knowledge, even though it is accurate and encyclopedic, is not necessarily a good practitioner. The reason may go back to the man's choice of a vocation. Some men are not medically minded. There are those who think that success as a practitioner will come only if much time is devoted in undergraduate and later years to research. Medical research and practice differ in qualifications of workers, in objectives and in methods. The aim of research is to advance knowledge by discovery of the new. Practice is the application of knowledge already known. Every question of diagnosis is for the clinician a research problem. Unless the physician is inspired by the activating curiosity to know, to find out by close observation, by comparison with his own experience and that of others, by use of laboratory aids or by experiment, he is an inefficient practitioner, non-progressive and doomed to failure. Too implicit reliance on laboratory examinations may cause sound clinical judgment to shrivel up from disuse. Besides, unless there is extreme watchfulness, the laboratory may develop the impersonal in the doctor at the expense of the personal. The true physician must possess a dual personality, the scientific toward disease, the human and humane toward the patient. The physician learns by study, he becomes proficient by experience. He profits by his own mis-

takes and those of others. The patient is the most valuable textbook for the undergraduate student and the graduate doctor. The lower schools, universities and professional schools are seriously concerned with what is the best preparatory course for the doctor. How may fewer but better doctors be trained? If good and efficient service is rendered by the ordinary practitioner as an individual or as a member of a group there will be fewer quacks, fewer cults, fewer semi-charitable organizations supported, or even run, by philanthropically minded laymen or recalcitrant physicians. The graduate of today, while he may know relatively less than the doctor of fifty years ago is, absolutely, far better informed than his predecessor. The practitioner realizes that he must know still more. He is eager to learn. The hard work in the local society in order to be most effective should be done by members and not so much by invited guests. The status of the practitioner will be determined largely by what he himself does rather than by what is done for him by others. What he gets out of practice will be in proportion to what he put in. A result of this personal effort on the part of the doctor will be that he will become more self confident, will lose some of his inferiority complex. His patients will sense this and go to him as of old for advice or for treatment. He will dare of himself to test a knee jerk, to assess at its real value a heart murmur, even to tell whether tonsils should come out or stay. He may possibly be so thorough as to make a rectal examination and courageous enough to pass judgment on the results, thus depriving the consultant of one of his cherished prerogatives and most fruitful sources of income. Specialism and research are necessities and have come to stay. And so has the practitioner; but only when, as, and if, he is qualified. There will surely develop in the future a competent practitioner, who, with integrity of character, with ideals of medicine as a profession and not a trade, with mind well stored with knowledge, with skill to apply this knowledge in a large proportion of cases of disease, with consciousness of his limitations, with readiness and ability to advise when and where expert help may be obtained, with good judgment and keen powers of observation sharpened by experience at the bedside and at the necropsy table, is worthy to be the family doctor or adviser, with all the traditional privileges and rewards that come from the personal relation of the old time doctor with the family—esteem and high standing in the community, the confidence and affection of his patient.

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IMMUNIZATION OF SCHOOL CHILDREN AGAINST WHOOPING COUGH

J. M. Frawley, Fresno, Calif. (Journal A. M. A., Sept. 29, 1934), has given prophylactic injections of 8 cc. of active undenatured *Haemophilus pertussis* to a group of 505 nonimmune school children. Injections were followed by practically no local or systemic reaction. Since vaccination, these children have been kept under observation. Forty-nine have been exposed to whooping cough without developing symptoms; sixteen were exposed at home and thirty-three at school. In thirty-one children, whooping cough developed. In twenty-five cases the paroxysmal stage was of less than one week's duration, in five cases of from one to two weeks' duration and in one case of two weeks' duration or more. As controls, 174 nonvaccinated children from the same homes and classrooms who had whooping cough during this period were classified on the same basis as the vaccinated children. The duration of the paroxysmal stage in these cases was as follows: In nine cases it was less than one week, in forty-nine cases from one week to two weeks, and in 116 cases two weeks or more.

President's Page

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TRUTH IN MEDICINE

Legitimate human progress and human understanding depend upon the discovery and recognition of truth. The quest for truth, therefore, commands the attention of all who have a desire to go forward and upward; of all who wish to be the recipients of benefits or who wish to bestow benefits upon others.

The word truth is of Anglo Saxon origin, and in common usage it is equivalent to fact or reality. A counterpart for the word used in that sense is found in the languages of all peoples—not only civilized peoples but peoples who have not reached that somewhat uncertain sophisticated state that we call civilization.

Philosophers speak of logical truth which is equivalent to correct perception and reasoning, and they speak of ontological, metaphysical or transcendental truth, or truth which is external to and independent of the perceiving and judging mind. As practical members of the medical profession, we are interested in logical truth, although I would not minimize the value of an excursion into the mysterious field of metaphysics with its entrancing problems as good exercise for the mind.

The Hindu conception of truth may be summed up in the brief but all-pervading expression: "That which is." From the viewpoint of the average human being, that is a good definition, provided "that which is" comes within the domain of correct perception and reasoning. If it does not come within that domain, then most of us are content to leave the speculations incident to it in the hands of the metaphysician.

Some truths are easily recognized by the special senses of normal individuals, provided the special senses are alert. These may be called simple truths, but they are none the less important because of their simplicity. Strange to say, notwithstanding their simplicity, they are often overlooked through inattention and

lack of method and system. For example, the color of the hair or of the eyes can be so easily ascertained that they may be recorded as simple truths, but these are not always remembered. Another example of inattention is the frequent inability of the doctor to recall whether an injury or abnormality is on the right hand or the left hand or on one foot or the other.

Such failure to recognize simple truths would be ludicrous were they not sometimes very serious. I know of a case where a surgeon operated for inguinal hernia on the wrong side, and a laryngologist once told me that he had done a tonsillectomy on the wrong patient.

In medicine, truth is often complex and in order to find it one must find and consider related truths of greater or lesser importance. For example, an individual may have complete inability to extend the leg at the knee. The informed surgeon knows that the lower leg is extended by the quadriceps extensor. He reasons, therefore, that there is paralysis of the anterior crural (or femoral) nerve which supplies the quadriceps extensor, but he would not think of putting that down as the diagnosis without knowing why it is paralyzed. In order to ascertain the truth, he tries to determine whether there has been direct damage of the nerve supply; whether other nerves are involved; whether there are neurological phenomena that would indicate pathology of the spinal cord. In this way, only, can the truth be found—it is found by correct perception and reasoning, and correct perception and reasoning in such a case are impossible without an accurate knowledge of the anatomy and physiology of related structures.

Let us employ another example: A patient has a distended abdomen. That there is distention of the abdomen is a simple truth because it can usually be determined by intelligent inspection. But inspection

alone does not explain why it is distended. The distention may be due to gas in the intestinal tract. If it is, percussion of the abdomen will give a tympanitic note. That is a truth that is not so simple, but it is truth, and the proof of it is through correct perception and reasoning.

But let us suppose that the distended abdomen is flat on percussion. Then, through correct perception and reasoning, we know that the distention is not caused by gas, but by some pathology that gives a flat note on percussion. The next step is to determine what is the intra-abdominal pathology. The abdomen is uniformly enlarged. Uniform enlargement of the abdomen is not common with uncomplicated intra-abdominal tumors, and in this case there is a succussion wave when the abdomen is tapped. That means that there is movable fluid inside the abdomen, and since there is uniform enlargement, the probable truth is that the fluid fills up the peritoneal cavity. I say that this is a probable truth because sometimes enormous ovarian cysts may fill the abdominal cavity. Then, if the patient is a woman, we must try to elicit other truths in connection with the beginning and clinical course.

If, after investigation, it is decided that the enlargement is due to free fluid in the peritoneal cavity, we are able to say that the patient has an ascites. That is an important truth, but it is not the principal truth, because no good doctor would think of making a diagnosis of ascites and stop there. He must take this subordinate truth and make of it a stepping stone while he continues his search for the predominant truth—that is, he must find what is causing the ascites. To that end, he considers cancer, tuberculosis, cirrhosis of the liver, diseases of the kidneys, diseases of the heart, and in his efforts to solve the problem he uncovers truths and endeavors to give to each its proper value.

The ancient philosophers looked at the sun in the daytime. It apparently came up over the eastern edge of the earth, then slowly moved through space and finally went out of sight beyond the western edge of the earth. They concluded that the sun moved and that the earth was stationary, but their conclusions were based upon incorrect perception and reasoning. They thought it was the truth, but it was not the truth.

Copernicus looked at the sun in the daytime, and at night he looked at the moon

and the stars and the milky way. But Copernicus did not stop there. He observed the lengthening days as springtime merged into summer, and again the shortening days as summer gave way to autumn. He observed the changed relations of the bodies in the sky. He observed eclipses of the sun and of the moon. He collected data. He reasoned and he reasoned correctly, and through correct perception and reasoning the revolutionary Copernican theory of the movement of the heavenly bodies was born—the truth was found.

Galileo discovered truth one day when he was attracted by the swaying back and forth of a chandelier while kneeling in a cathedral. He not only perceived the swaying of the chandelier, but through correct reasoning he established important truths touching the properties of the pendulum.

Through the exercise of correct perception and reasoning, Galileo discovered many other important truths. Among them was the truth which he had proven to his own satisfaction, that the velocity of falling bodies of the same density is not changed by the size of the body. He made an announcement of this truth while he was professor of mathematics at the University of Pisa, and in order to demonstrate it to his associates on the faculty he carried two cannon balls—one large one and one small one—made of the same material, to the top of the leaning tower of Pisa. They were dropped from the top of the tower at the same instant, and at the same instant they—the big cannon ball and the little cannon ball—struck the ground. That was demonstrable truth, but the disgruntled and fanatical followers of Aristotle went back to their quarters, read the old books, and declared that it could not be because it was not written in the books.

Not many years ago it was believed that malaria was transmitted by a "miasm," but the truth about malaria was ascertained when Laveran found the parasite of malaria in the blood and when Ronald Ross proved that the parasite was carried by the mosquito.

The failure to recognize truth may be due to ignorance, lack of industry, or to egotism.

As indicated above, many of the important truths in medicine, as well as in other fields of human endeavor, can be dis-

covered only through broad and comprehensive knowledge as a basis for perception and reasoning. This is an acute fact in medicine. If the doctor of medicine does not have a broad and substantial knowledge of the fundamentals upon which medicine is based, he is not able to perceive and reason correctly, and will not be able, therefore, to discover truth.

My experience and observation lead me to the conclusion that there is often failure to discover truth because there is lack of industry on the part of the doctor. As a rule, the problems of the doctor can be solved, provided there is a combination of adequate knowledge and industry on his part.

On first sight, the statement that egotism may be responsible for failure to discover the truth may appear to be far-fetched, but I believe that there are many examples which would indicate that the statement is true. The individual who believes that he is absolute master of his profession; the individual who makes diagnoses glibly and without any check being placed upon him by fellow practitioners; the individual who is inordinately proud of his reputation—all such individuals sometimes do foolish and even disastrous things. A striking example is that of the famous Irish surgeon who, in passing through a ward, found a patient with a swelling just below the groin. This surgeon was known as a keen diagnostician, and he was anxious to maintain that reputation. After a hasty inspection and palpation, there was a diagnosis of abscess. The field was quickly prepared, and a scalpel was plunged into the swelling. There was immediate hemorrhage that could not be controlled, and the patient died, because the surgeon had mistaken an aneurysm for an abscess. He was not an ignorant man, but vanity carried him to the point where it destroyed his ability to perceive and reason correctly.

Truth is important to all human beings, and to none is it more important than to those who take the problems of life and death into their hands. It is so important that all of us should subscribe to the statement of Thomas Carlyle in *Sartor Resartus*: "Truth! though the heavens crush me for following her."

COMFORT AND ACUITY OF VISION SHOULD BE PROVIDED BY GLASSES

The eye physician will insist on the use of glasses only for those patients who most certainly need them, Dr. Hyman Cohen explains in the November Hygeia in the chapter of "The Eye Book" which deals with eyeglasses.

Glasses should primarily improve the sight; that is, they should increase the acuity of vision of those who are near-sighted, astigmatic or exceedingly far-sighted and of most persons past the age of forty-five.

It is, however, an equally important but frequently neglected point that glasses should make seeing more comfortable and eliminate irritation and strain of the eyes.

FACTORS THAT INFLUENCE RHEUMATIC DISEASE IN CHILDREN: BASED ON STUDY OF TWELVE HUNDRED RHEUMATIC CHILDREN

Albert D. Kaiser's, Rochester, N. Y. (*Journal A. M. A.*, September 22, 1934), statistical analysis of the various manifestations noted in more than 1,000 rheumatic children reveals a variety of clinical symptoms. Some children have six or more rheumatic symptoms, while others show only a few definite complaints. Such rheumatic manifestations as pancarditis and rheumatic nodules denote a serious form of rheumatic infection, while the complaints of tonsillitis, pallor and anorexia may be an indication of less serious rheumatic infection. Pancarditis is the most common major complaint in children stigmatized with rheumatic disease. Acute arthritis or rheumatic fever is the second most common rheumatic manifestation. Chorea due to a rheumatic infection was found to occur in 29 per cent of the group. Muscular rheumatism or "growing pains," is a rheumatic manifestation subjected to much criticism. That such symptoms do occur in rheumatic persons is now quite generally recognized. In the reported group 18 per cent of the children gave evidence of chronic pains in the muscles. Rheumatic pneumonia and rheumatic pleurisy are perhaps not always recognized and for that reason the incidence is low. Erythema nodosum was diagnosed in twenty-four cases. Rheumatic nodules and purpura were found only a few times. Rheumatic infection occurs at all ages of childhood but most frequently between the ages of 8 and 10. It occurs most frequently in Rochester during the late winter and spring months. No social or economic factors play any significant part in the control of this disease. Rheumatic infection is essentially a chronic disease and tends to recur in more than 50 per cent of the cases. Recurrences of the disease are much less likely to develop five years or more after the initial infection. Rheumatic infection occurs slightly more often in children whose tonsils have not been removed at the time of the initial attack. The mortality rate is nearly 50 per cent less in children whose tonsils had been removed at the time of the initial attack. Recurrent attacks were not lessened in tonsillectomized children or in those who were tonsillectomized after the initial attack. Hemolytic streptococcus nucleoprotein skin tests were positive in 75 per cent of the rheumatic children as compared to 32 per cent of nonrheumatic children. Tonsillitis or sore throat was the preceding infection in 59 per cent of the rheumatic children. The most severe cases of rheumatic infection followed attacks of tonsillitis and dental infections. Respiratory infections are an important factor in causing recrudescences of the rheumatic phenomena. One may assume the existence of some constitutional susceptibility to rheumatism, but no proof of it is available.

THE JOURNAL

OF THE

Oklahoma State Medical Association

Issued Monthly at McAlester, Oklahoma, under direction of the Council

VOL. XXVII DECEMBER, 1934. No. 12

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Entered at the Post Office at Muskogee, Oklahoma, as second-class mail matter July 28, 1912.

This is the official Journal of the Oklahoma State Medical Association. All communications should be addressed to The Journal of the Oklahoma State Medical Association, 203 Ainsworth Building, McAlester, Oklahoma. \$4.00 per year; 40c per copy.

The editorial department is not responsible for the opinions expressed in the original articles of contributors.

Reprints of original articles will be supplied at actual cost provided requests for them is attached to manuscripts or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, 203 Ainsworth Building, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

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PRINTED BY HOFFMAN-SPEED PRINTING CO., MUSKOGEE

EDITORIAL

HE CHANGED HEARTS AND HISTORY

Though born in Bethlehem, near Jerusalem, the home of Jesus was in Nazareth, an insignificant village where only mediocre people lived. Indeed, Jesus never lost the sobriquet of his home town. During his ministry he was reminded that he was a small-town man; and on his Cross there were written these words, in Hebrew, Latin, and Greek, so that all might read: "Jesus of Nazareth." He was just a plain man from a small town. But he changed history!

The record tells how he grew in wisdom and stature and in favor with God and man. He probably never went outside

the boundaries of Palestine, and learned at home and in the temple the religious precepts of his race. Certainly he was provincial, and when as a young man of twenty-nine he began his public career, the people had never heard of him.

His crowning virtue seems to have been that he was exactly the kind of man he should have been. He lived up fully to his possibilities. Every virtue he espoused he lived out among his fellow-men in completeness and perfection. There was no duplicity in his speech or action. He mixed alike with the wealthy and the poor, with the learned and the ignorant. He was especially fond of children, on one occasion setting a little child before his hearers, saying, "of such is the Kingdom of Heaven." He was a man who enjoyed society; he attended feasts, ate with common people or with the socially elite, and was a man among men. Pious critics called him a glutton and a wine-bibber.

He also loved the out-of-doors, walked with his followers in the grain fields, chose his illustrations from natural life, speaking of lilies, sparrows, sheep, harvest fields and storm clouds. He mingled with fishermen, and many of his messages were given beside the sea. He was wont to steal away to enjoy meditation with the Father in the quiet stillness of the mountain side. Thus his life was well balanced. He could mix freely and joyously with others or could be alone with his thoughts, ambitions, and temptations.

Whatever he taught, he also lived. His mind and heart were consumed with only a few great themes, which were worth living for and worth dying for. He taught that all men should be bound together in a brotherhood of mutual service and helpfulness, and that forgiveness is indispensable for such a brotherhood; because he well knew that men never could build a better world by holding anger, spite, and grudge. He taught that every man had a soul, that even the outcasts were worthy helping. He taught that goodness did not consist in keeping a set of rules, but in having the right attitude and spirit toward God and men.

Wherever the knowledge of his winsome personality and his teachings have gone, men's hearts have been changed and conditions improved. In his name colleges, hospitals, sanitariums, orphanages, and dispensaries have been built. In his name,

service has been shown to be the greatest thing for which a man can spend his life.

We celebrate his birthday with a festival we call Christmas. In his name we give gifts, sing carols, and extend the doctrines of peace and good-will. Because his spirit lives in our hearts, and because we see life, though dimly, as he saw it, he, through us, still changes history.

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SUMMARY OF COMPULSORY SICKNESS INSURANCE PLAN IN GERMANY, GREAT BRITAIN AND FRANCE*

(Continued from November Journal)

The report of the International Labor office on compulsory sickness insurance (page 173) commences its chapter on "Condition of Benefits" with the following significant statement: "The object of sickness insurance benefit is to compensate, at least in part, for the loss of income suffered by an insured person owing to the incapacity to work, produced by sickness."

As to the service rendered by the medical profession in the United States, everybody agrees that it at least compares favorably with that offered in other countries. Certainly laboratory procedures, such as roentgenray diagnostic procedures, are much more highly developed and readily available in this country. The question of whether the people are able to pay for such service may be debatable, but surely there is no lack of such service. Neither can it be denied that the American physician has contributed his share toward the development of newer methods and betterment of medical practice.

If this be so, then all one can say is that the entire movement (except for the two premises conceded) is unmoral. A movement by people who are balked by an economic system in their efforts to raise wages, who then merely turn to an indirect method of raising wages, disregarding the many consequences of their act, such as a thorough dislocation of the medical profession, destroying traditions of the profession, subjecting the medical profession to the evils of economic strife and barter, cannot be called service. It is admitted by all, even the advocates, that such are the results. "In Germany," declare Simon and Sinai,⁶ "the battle between the societies and the medical pro-

fession has been practically continuous for fifty years and shows few signs of cessation."

The experience of the British medical profession has not been any better. In spite of the rather authentic reports that the English medical profession is now in favor of sickness insurance, a perusal of the British medical journals makes one sick at heart to see what has become of professional medicine over there. There is haggling of the worst sort going on, and the time of physicians as well as others is just being wasted. Reports of complaints of trivial nature, such as a doctor signing certificates for a poor chronic invalid without seeing the patients as he should have, can be read almost any week. It is such "ponderous questions" that are discussed by full sized committees. All that this tends to do is to lower standards and reduce the doctor to a mere worker, high grade, to be sure, but still a worker, who is buffeted and tossed about by new forces released by a set of inspectors, supervisors, and whatnot.

Were all this done for a true social gain, be it ever so small, this sacrifice might be justified, but all that is attempted, as testified to by the very advocates of the plan, is to raise wages indirectly, and it is quite problematical whether even this is accomplished. Such a procedure, namely, hiding the real objective, and talking about beneficial results to the community, which, they themselves admit, do not materialize, is certainly high-g geared propaganda.

Does the worker who is compulsorily insured lose anything by this arrangement, is another question that needs an answer. Fair-minded students of the subject think that there is some lessening of the standard of medical practice, although it must be admitted that there are equally as many who claim improvement instead of deterioration of medical practice.

There is, however, another feature which deserves a great deal of discussion, namely, the psychologic effect on the worker. Lockhart,⁷ who is apparently strongly in favor of health insurance, and a member of the British Industrial Health Research Board, quotes Smith and Greenwood to the effect that "the amount of sick absence in any organization is affected profoundly by conditions not of physical but of emotional environment." Further on Lockhart says: "I would go so far as to assert that well over half the

*From report of Pennsylvania Committee published in annual bulletin.

time lost among the insured population due to ill-health is psychoneurotic." He emphasizes that he is not referring to illness, but to loss of time.

If this be so, it is certainly a serious drawback to the insurable population. They pay a high price for the pittance that they receive. It is not only the time that is lost, but it is the lessening of the morale of the population, the cultivating of the habit of leaning too much on someone else, and getting away from the ability of one's own difficulties, a trait that is absolutely essential to make a success of life.

We realize that the advocates of insurance on reading the above statement will raise the cry that this is a new way of pleading for what is contemptuously called "rugged individualism." But whether rugged individualism in industry is desirable or not, it certainly is a most essential requisite for the individual in making adjustment to his environment. It is quite obvious that leaning on someone, in this case the insurance fund, reacts badly on the personality.

The advocates of socialized medicine seem to think, or rather so they state, that the only thing necessary to overcome this bad effect is to divorce cash benefits from the medical service benefits, and they point to England's experience with the problem of "malingering".*

In England the Funds themselves selected medical inspectors, and it is claimed that the cases that hung on too long were reduced promptly to about one-half. Be that as it may, it does not dispose of the problem of psychoneurosis and its role in such a scheme. The very fact that the number of days of sickness in all countries in which sickness insurance is in force has increased so markedly speaks for the fact that psychoneurosis is precipitated by the insurance factor.

The separation of cash benefits merely shifts the issue to other grounds, and all it probably will do eventually is to bring about strife and misunderstanding between the doctors of the insured on the one hand, and the medical inspectors on the other hand. This strife is bound to develop because the former applies the clin-

ical test to the sickness problem, and the latter is bound to develop the so-called insurance point of view.

We have many examples in this country, such as the compensation law cases, the veterans' bureau cases, and finally the disability cases. In all of these, sharp division of opinion among doctors has developed as a result of the differing points of view. We do not mean to convey the impression that this is due to dishonesty on the part of either party; rather, it is due to approaching the problem each from different angle. This possibility, to our mind, constitutes one of the most serious problems of sickness insurance, if for no other reason than our account of the vast number of insurable workers involved.

This problem deserves a much lengthier discussion, but owing to the nature of this report must be curtailed.

What are the effects on the medical profession?

It may be readily admitted that the income of the doctor is apt to improve, for the reason that he receives a more stable income from that part of the population which under the present system contributes very little to the physician's income. But doctors traditionally have not taken their own personal interests into consideration as a decisive factor, nor has it played a role in determining their stand in such matters.

On the other hand, the doctor's freedom of action is curtailed. It seems to us that no matter how we may insist on the elimination of a third party in the scheme of things, such cannot be avoided. It is in the very nature of the set-up to have a third party under one guise or another. The funds must be administered, and this means lay officers, committees, arbitration boards, visitors, and whatnot. In addition, there is the commercial spirit that is bound to creep in once an administration is set up. They immediately become a bureaucratic class with the narrow class psychology. It is inevitable that they should want to succeed, and little by little they develop a standpoint which is diametrically opposite to the medical point of view.

Even the so-called ideal French plan in a comparatively short time of operation—two years—has already brought this out. Hillaire³ says: "A study of the professional medical journals certainly does not indicate a hymn of praise for sickness

*The writer feels that the term "malingering" is unfortunate. This does not cover all or even a large part of the cases of which Lockhart speaks. Rather, it is the psychoneurotic situation which is released by this arrangement, and not malingering. Malingering as such is rather rare.

insurance. Fatigue from filling out the multiple reports; indirect but real friction with the personnel managing the societies; irritation of somewhat unjustifiable criticisms and suspicions; in brief, the interference between their patients and themselves by the undesirable third party, even though there be no payment by the third party, although there is a reimbursement, and sometimes also a critical and hostile third party."

It is doubtful if even under the ideal set-up of the Michigan plan this difficulty can be avoided altogether. But since this plan is not yet in operation it is idle to speculate on this point.

To summarize this point rather briefly, it is our feeling that the insurance feature inevitably emphasizes the business side of the practice of medicine, and the sad part is that under the system it is unavoidable.

We have already referred to indignities and humiliations experienced by the physicians and the representatives of physicians in their dealings with representatives of other groups. The bickering over trivial matters, the constant criticism of lay personnel in matters of which they cannot possibly have any knowledge, irritates physicians, and sooner or later the very spirit of the profession is bound to be crushed, and instead of the traditional attitude of a noble profession there will develop a cynical, commercial attitude on the part of at least a majority of the profession.

One has but to follow the news in British journals from week to week about the clashes that take place, and this, after 22 years of operation of the law. In Germany, the profession did not cease fighting throughout the fifty years of the existence of the law. In France, the profession, forewarned by the happenings in other countries, has battled courageously and obtained a law which in a measure preserved a semblance of professional relationship. In less than two years, as reports indicate, the Funds little by little are commencing to undermine the entire structure, and sooner or later the profession there will lose heart and give up the fight.

There is still another phase of the question which deserves the attention of the profession, namely, the danger of lay

people and borderline semi-professional groups meddling in medical matters. These groups, as soon as they learn a few scientific terms, get the notion that medicine is an open book to them, and that they are authorities on the subject. Reading of the writings of all these advocates of this reform are sufficient to bring this point out.

Rubinow,⁹ one of the better informed in such matters, bases a great deal of his argument for socialized medicine on a sample case: A Mrs. C., one of the "neediest cases," which the NEW YORK TIMES used to arouse sympathy and get contributions for its Christmas fund. While it is true that he used it as an example, we must remind him and the others that at least as far as the requisite medical service in the case was concerned Mrs. C. certainly would have had no trouble in obtaining it. It is strange that in the face of experience in other countries Rubinow,¹⁰ in discussing the proposal for socialized medicine that was worked out by the American Association for Labor Legislation, says: "It is safe to assume that had the proposed system been enacted into law 20 years ago, we might have been dealing today with a VERY DIFFERENT WORLD (capitals ours) with a very much different picture of poverty and ill-health."

In truth, is not this a bit of wishful thinking? May we ask, why did not these much to be desired improvements occur in Germany, Great Britain and other countries? We have shown previously that it is universally accepted that health has not improved any in these countries, and that conversely we have not suffered by comparison in the United States. The difficulty is that most of these well-meaning people do not think the problem through. They are so set on boosting their pet theories that precious results unfavorable to them are brushed aside altogether.

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6. Simons and Sinai, loc. cit., p. 56.
7. Lockhart, L. P., Industrial Man and His Background. *The Lancet*, April 21, 1934, p. 825-829.
8. Hilaire, Charles: *La Presse Medicale*. 92: 1720-1721 (Nov.), 1932.
9. Rubinow, I. M.: *The Quest for Health*. Henry Holt & Co., 1934, p. 174.
10. Rubinow, I. M.: *The Quest for Health*. Henry Holt & Co., 1934, p. 209.

Editorial Notes—Personal and General

DR. D. G. WILLARD, Norman, is reported ill at his home.

DR. and MRS. F. P. von KELLER, Ardmore, have returned from San Antonio where Dr. von Keller attended the Southern Medical Association meeting.

DR. and MRS. E. E. LAWSON, Medford, have returned from Old Mexico, after attending the meeting of the Southern Medical Association at San Antonio.

DR. and MRS. J. A. MUNN, McAlester, have returned from Philadelphia where Dr. Munn attended the Inter-State Post Graduate Medical Association of North America.

DR. E. K. WITCHER, who, because of illness was compelled to give up his work last year, has returned to Tulsa and opened his office in the Medical Arts Building. Before returning Dr. Witcher spent several weeks in Chicago doing post graduate work.

APPLICATION BLANKS are now available for space in the Scientific Exhibit at the Atlantic City Session of the American Medical Association, June 10-14, 1935. The Committee on Scientific Exhibit requires that all applications be filled out on the regular form and requests that this be done as early as convenient. Applications close February 25, 1935.

Persons desiring application blanks should address a request to the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

News of the County Medical Societies

JEFFERSON County Medical Society met November 5th at Waurika. "Rheumatic Fever" was discussed by Dr. W. C. Burgess, Ringling, and "Urinary Analysis" by Dr. L. L. Wade, Ryan. A round-table discussion followed these two talks.

OKFUSKEE-OKMULGEE County Medical Societies met November 19th at Okemah and presented the following program:

"Phases of Anemia"—Hugh Jeter, Oklahoma City.

"Diseases of the Chest"—L. J. Moorman, Oklahoma City.

BRYAN County Medical Society held its regular meeting with Dr. B. B. Coker, Coker Hospital, at Durant, November 12th. The following subjects were presented and discussed:

"Useful Drugs in the Treatment of Heart Disease"—C. D. Strother, Sherman, Texas. Discussion—D. C. Dunham, Sulphur.

"Common Ano-Rectal Diseases"—Raymond L. Murdoch, Oklahoma City. Discussion—By every doctor present.

SOUTHEASTERN Oklahoma Medical Association held their twenty-sixth semi-annual session December 6th, at McAlester. All sessions were held at the Oklahoma state penitentiary. The following program was presented:

"A New and Successful Method of Reducing High Blood Pressure"—John C. Marshall, Checotah.

"Treatment of Lobar Pneumonia"—Wm. L. Shippey, Wister.

"Intravenous Administration of Hydrochloric Acid"—D. E. Little, Eufaula.

"Interesting Points in Routine Radiology"—James C. Johnson, McAlester.

"Typhoid Fever in Children"—J. H. Veazey, Madill.

"Skeletal Traction in Fractures of the Thigh and Leg"—L. S. Willour, McAlester.

"Practical Demonstration of the Anesthetic Evipal"—J. A. Munn, McAlester.

Clinic, Demonstrating the New General Anesthetic Evipal—J. F. Park, McAlester; J. A. Munn, McAlester.

SOUTHERN Oklahoma Medical Association held their twenty-fifth quarterly session December 4th, at Ardmore. A six-o'clock dinner was served after which the following program was presented:

"Phemic Fever, Illustrated With a Case of Pachymeningitis Hemorrhagica Interna"—D. C. Enloe, Sherman, Texas. Discussion—J. H. Holland, Madill; D. Long, Duncan.

"Cholelithiasis and Cholecystitis"—W. H. Livermore, Chickasha. Discussion—G. L. Johnson, Pauls Valley; F. P. von Keller, Ardmore.

"Dermatological Manifestations of 'Syphilis'"—Darrrell Duncan, Oklahoma City. Discussion—Chas. Rayburn, Norman; C. A. Johnson, Wilson.

"Undulant Fever—Symptoms"—F. Y. S. Moore. Discussion of Treatment—Lea A. Riely, Oklahoma City.

Medical Ethics—Louis H. Ritzhaupt, Guthrie.

"Talipes-Equinovarus—Treatment From Infancy to Thirty Years"—Wade Sisler, Tulsa. Discussion—W. J. Weedn, Duncan.

"Trans-Urethral Prostatectomy"—I. A. Fulsom, Baylor Hospital, Dallas. Discussion—A. R. Suggs, Ada; R. C. Sullivan, Ardmore.

"Tuberculosis," with Lantern Slides—Floyd Moorman, Oklahoma City. Discussion—F. E. Sadler, Sulphur; R. M. Burke, Sulphur.

DOCTOR LLOYD MELVILLE SACKETT

Dr. L. M. Sackett, Oklahoma City physician for twenty-five years, died November 12th, after a week's illness. Dr. Sackett was 54 years old.

Born in 1880, graduating, Illinois, 1903. After studying at the Polyclinic College, New York City, Dr. Sackett began his practice in Wilburton in 1905. Shortly after coming to Oklahoma City in 1909 he became staff physician at Wesley Hospital; for seven years he was assistant professor of gynecology at the University of Oklahoma School of Medicine.

Dr. Sackett was a member of the Masonic lodge, the American Legion and was affiliated with Alpha Kappa Kappa medical fraternity.

He is survived by his wife, one daughter and a brother.

DOCTOR J. L. MOYSE

Dr. J. L. Moyses, City Health Officer of Okemah, Okfuskee County, passed away at 4:05 o'clock Monday morning, October 22nd, at his home in Castle, following a brief illness from coronary sclerosis. He is survived by his widow, four daughters and a son.

Dr. Moyses was born in Greenville, Mississippi. He was a graduate of Rush Medical College in Chicago and came to Indian Territory to practice after finishing school. He served as a private in the Spanish American War, and in the Medical Corps during the World War.

Dr. Moyses was a member of the Okfuskee County Medical Society and Oklahoma State Medical Society.

Funeral services were held at the First Christian Church, Okemah, Okla., Tuesday, October 23rd, with his former pastor, Reverend Homer Haislip, Russellville, Arkansas, officiating. At Highland Cemetery, in Okemah, the Spanish American War Veterans, of which Dr. Moyses was Commander; the American Legion, and National Guard carried out the military services.

ATTENTION!

Your attention is particularly called to the advertisement of the Lumbermen's Mutual Casualty Company on page 12 of this issue of the Journal. Their advertised rates are much lower than other companies doing business in the state at this time, and careful investigation of this company shows them to be absolutely responsible. We feel that in bringing this advertisement to your attention we are rendering a good service to our membership.

NEURITIS

Stanley Cobb and Howard C. Coggeshall, Boston (Journal A. M. A., November 24, 1934), state that the group of diseases caused by viruses is becoming rapidly larger as the problem is better understood, but knowledge is still rudimentary in this field. Many of these diseases may be accompanied by peripheral neuritis, usually as a late complication; but when the virus attacks the spinal cord and nerves primarily the opposite is true. For example, the tenderness of the muscles in the early stages of acute anterior poliomyelitis is probably due to the beginning of degeneration of the neuron including the axon; thus, pathologically speaking, there is a neuritis. The acute infectious or acute febrile type of polyneuritis is becoming a well recognized entity. There is evidence that this is due to a virus, probably specific, but as yet unknown. A long list may be made of infectious diseases known to be complicated by polyneuritis. The obvious inference is that absorption of the toxins formed by the invading organism causes the neuritis. The reasoning, however, does not hold, for neuritis is usually a rare complication of these diseases, and other factors must be evoked in order to explain the occurrence. Of course the neuritis following "serum sickness" is the best evidence available that bacterial toxins cause neuritis. In typhoid and other prolonged fevers, vitamin deficiency must be considered as a possible etiology. In diseases that

may be due to pyogenic organisms the neuritis rarely develops early in the course of the illness. Generally it is late, when the infection has become chronic, and then abscess formation with absorption from a chronic focus must be looked for and treated. A chronic neuritis, especially if accompanied by arthritis and myositis, may well be due to focal infection of this sort; infections of tonsils, teeth or gall-bladder may be implicated. A mild neuritis is often overlooked when it occurs with a conspicuous arthritis. Not infrequently acute infection acts as a precipitating factor in neuritis owing to deficiency of vitamins; especially in children the acidosis resulting from fever may determine the onset of lead paralysis. Many polyneuritis syndromes are merely clinical variations of one etiologic group. The neuritis of diabetes may perhaps be caused or precipitated by the dietary restrictions imposed on the patient. Little is known of the syndromes known as "recurrent" and "chronic progressive neuritis," but the descriptions suggest an etiology based on vitamin deficiency. The neuritides associated with myxedema and hematuria apparently have a metabolic origin. The neuritis caused by lead and by arsenic is well known. Modern industry has increased the hazard to which workers are exposed. Eighteen substances are said to cause polyneuritis. The extraordinary specificity of some of these substances is emphasized; certain of them always appear to attack one special pair or group of nerves. Ethyl alcohol is not a neuritic poison but, when taken as a beverage, either causes dietary deficiency and hence beriberi or causes neuritis because of impurities. The local neuritides caused by pressure and trauma are largely surgical problems. Local edema and fibrosis are common etiologic factors often overlooked. The local neuritides caused by infectious organisms and their toxins are rare except in the case of diphtheria.

EPIDEMICS OF INFLUENZA AND GRIP HAVE MADE PUBLIC "SINUS CONSCIOUS"

Today the public is "sinus conscious," and sinus inflammation is much more common than ever before in the world's history. The devastating epidemic of grip and influenza that have occurred periodically since 1918 are largely responsible for this condition, according to Dr. Walter A. Wells, who answers the question, "What Is Sinus Trouble?" in the October Hygeia.

Every head cold is complicated with some congestion of the nasal sinuses, and if a simple cold does not clear up in five or six days, it is probable that there is inflammation in one or more of the sinuses. The important thing is that the germ laden secretion should not be left locked up in the sinus interior too long; delay in consulting a physician may result in serious consequences.

Another characteristic of sinus trouble is that an already chronically inflamed sinus is apparently always awaiting another chance to worry its victim. A sinus cavity once attacked by germ life is more liable after the attack to be inflamed in the same way again, and every time a patient has an attack, he is that much weaker to withstand another onslaught.

The same methods that build up resistance to colds will do much to prevent sinus trouble. But even though a person is careful about fresh air, exercise and diet, colds, grip and influenza may be contracted in crowds. Even then the secondary infection of the sinus may be prevented, but if all efforts fail, the physician should be consulted at once if one does not wish to become a chronic sinus sufferer.

ABSTRACTS «» REVIEWS «» COMMENTS AND CORRESPONDENCE

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D.
1717 North Robinson Street, Oklahoma City.

Painful Heels Among Children (Apophysitis). Henry W. Meyerding and Walter G. Stuck. *J. Am. Med. Ass'n*, CII, 1658, May 19, 1934.

Since the discovery of roentgenrays, a number of clinical syndromes have been shown to be specific diseases. The pathological physiology of the bone as shown by the roentgenograms has given an understanding of the disease process in Osgood-Schlatter disease, Kohler's disease, Legg-Perthes disease, Buchmann's disease, and Freiberg's disease. The roentgenogram has made it apparent that there are marked similarities in the general pattern in these diseases.

A seemingly uncommon epiphyseal involvement is calcaneal apophysitis, as to date only forty cases have been reported in the literature. Only twenty-one have been seen in the Mayo Clinic—in two girls and nineteen boys. The age range was from seven and one-half to seventeen years; the average age was ten and two-tenths years. There was bilateral involvement in fourteen cases.

The apophysis is both a pressure and a traction epiphysis. It is subject to direct trauma as well as to a constant lateral pull from the attached muscles.

The condition is seen most commonly in vigorous boys between the ages of eight and twelve. A history of trauma may be obtained. The condition is usually bilateral. On examination, the heels are found to be tender posteriorly and there may be some lateral thickening at the insertion of the tendoachillis. Often the children are overweight or present some gross evidence of glandular disturbance.

The characteristic feature is the change noted on roentgenographic examination. In the lateral view, the apophysis is seen to be fluffy, moth-eaten, somewhat flattened, or partially fragmented, according to the stage of the disease. All of the pathological changes are dependent directly or indirectly on the disturbance in circulation. Since the apophysis appears late in the tenth year and unites at the age of seventeen, the disease is confined to this short period.

Treatment is palliative and extremely simple and consists of the application of local heat and massage during the acute stage. The heels are elevated to relieve the tension on the gastrocnemius muscle. In severe and resistant cases, immobilization in plaster may be necessary.

It is common for such a process to take place in the heels of healthy children, but the symptoms are often so mild that no roentgenographic examination is made; hence, the diagnosis is not absolute. Due to the above facts, it is concluded that the disease is not an unusual one, but passes undiagnosed because of the mildness of the symptoms and because roentgenograms are not taken.

Late Results of the Lavall Operation and the Bone-

Peg-Insertion Operation. N. I. Blinov. *Orthopaedia i Travmatologia*, IV, 1, 1933.

A thorough study of the Russian and foreign literature shows that the late results of these operations in tuberculous joints are less favorable than has been reported. The personal observation of the author prompts the following conclusions:

The autoplasmic transplantation of a bone peg in tuberculous joints does not alter the development of the disease. In the majority of cases, a temporary subjective improvement has been noticed. The presence of the bone peg does not improve the atrophy of bone. The introduction of a bone peg can be justified in old tuberculous processes, but in these cases there are better methods of producing an ankylosis of the joints.

The Clinical and Roentgenographic Interpretation of Lumbosacral Anomalies. Albert B. Ferguson. *Radiology*, XXII, May, 1934.

Lumbosacral anomalies produce symptoms only through faulty mechanics. Faulty support or faulty relationship produces abnormal stresses or pressures. Whether an anomaly is due to faulty support or to faulty relationship, its mechanical weakness can be compensated by muscles and ligaments. As long as these soft tissues are of sufficient strength and tone to meet the conditions without fatigue, there are no symptoms—the patient is compensated.

Muscles and ligaments that are thus occupied in supporting or protecting the lumbo-sacral area have less than normal capacity for meeting extraneous loads or stresses, as a certain portion of their total capacity is already in use. Hence these tissues are more liable to be exceeded, in which event the patient is decompensated and must be relieved by rest in order that these injured tissues may recover and regain a state of compensation.

Decompensation occurs in several ways, which the author discusses in detail.

The conception of compensation and decompensation which has been stated points the way for the treatment or prophylaxis of these conditions. For mild cases it is essential to build up muscle tone and power sufficiently to meet the stresses—that is, to keep the patient compensated.

The fusion operation, to eliminate motion and provide stability, is indicated when the attacks become so frequent and so severe that it becomes worth while for the patient to give up the time necessary for the operation in order to put an end to the attacks.

Many individuals have chronic arthritis in the spine as well as lumbosacral anomaly. Such cases are not favorable for surgery, as complete relief cannot be expected, due to the arthritis in areas which are not fused.

There is no positive differentiation by physical examination between lumbosacral anomalies and so-called sacro-iliac strain. The results of surgical treatment indicate that, when there is no definite sacro-iliac abnormality visible in the roentgenogram, the

lumbosacral area, rather than the sacro-iliac joints, must be suspected as the source of symptoms.

Our spines were developed for the four-footed position and are not yet adapted to the erect position, so that mechanical weakness at the lumbosacral area is usual rather than exceptional. We must consider the lumbosacral area not as normal or abnormal, but as mechanically sound or mechanically unsound. Stability, or sound mechanics, at the lumbosacral area depends in a great degree on the articulations of the lumbosacral arch. Considered mechanically, probably the worst type of facets are those which are asymmetrical.

The fifth lumbar vertebra may be displaced anteriorly on the sacrum. Although attacks of severe pain may be due to increase of displacement, most of them are due to strains which occur because of the mechanical weakness.

Posterior displacement of the fifth lumbar vertebra is one of the most common of the significant lumbosacral anomalies. The mechanism of the displacement is as follows: On hyperextension, the lumbosacral joint being hypermobile, the fifth lumbar vertebra glides backward on the first sacral vertebra—an exaggeration of the normal motion. Then on flexion, instead of gliding forward, the fifth lumbar vertebra tilts forward, being caught in the position of posterior displacement. The displacement may often be reduced by reversing this process, extending the spine, and then gently flexing it with traction of the pelvis.

In a lumbosacral structure which is mechanically sound, the lumbosacral angle is more acute when standing than when lying, due to slight sagging forward of the pelvis on standing. If, however, there is a mechanical weakness which is producing the symptoms, the patient, on standing, tilts the pelvis backward so as to reduce the lumbosacral angle and bring the sacrum more under the line of the weight thrust—a protective reaction. For this reason, the lumbosacral angle may appear worse in a normal subject when standing than in one who has lumbosacral weakness.

The anteroposterior mobility of the fifth lumbar vertebra should be determined, for the reason that abnormal mobility at this point is just as much a mechanical weakness as is a bony anomaly. The amount of mobility is determined by making true lateral views in flexion and in extension. Fifteen or more degrees of anteroposterior motion, or a movement of the spines of the fifth lumbar and first sacral vertebrae of more than one-half inch in relation to each other, constitutes sufficient mobility to be a cause of symptoms.

INTERNAL MEDICINE

Edited by L. J. Moorman, M.D., 1200 N. Walker, Oklahoma City; C. E. Bradley, M.D., Medical Arts Building, Tulsa; Hugh Jeter, M.D., 1200 N. Walker, Oklahoma City

By HUGH JETER, M.D.

The Specificity of the Complement Fixation Test for Amebiasis. Emil Weiss, M.D., and Lloyd Arnold, M.D., Chicago, Ill. *American Journal of Digestive Diseases and Nutrition*, Vol. I, October, 1934.

This report adds some valuable details or specific information concerning the complement fixation test. The following conclusions are given:

1. Alcohol and acetone extracts of *E. histolytica*

yield a specific antigen. Specific antiamebic serum can be produced by the injection of this antigen.

2. The beef-heart lipoidal antigens used in the Wassermann and Kahn tests can give nonspecific reactions not only with serum of amebic dysentery patients, but also with immune serum produced from various protozoa. These beef-heart lipoids can produce antisera which can be shown to contain nonspecific antibodies.

3. When complement-fixation tests are positive for both amebiasis and syphilis (Wassermann) the Wassermann reaction can be checked by using a specific spirochete antigen instead of the beef-heart lipoids.

The Monocyte, Monocytosis, and Monocytic Leukosis; a Clinical and Pathological Study. Charles A. Doan, M.D., F.A.C.P., and B. K. Wiseman, M.D., Columbus, Ohio. *Annals of Internal Medicine*, Vol. 8, October, 1934.

In this the authors discuss:

The Monocyte and the Cells of the Blood.

The Monocyte and the Cells of the Connective Tissues.

The Monocyte in Pathologic States.

The Monocyte in Leukemia.

Chronic Monocytic Leukemia.

Monocytic Leukemia With Aleukemic Phase; Leukemia Cutis.

Acute Monocytic Leukemia.

The Problem of Mixed Leukemia.

Etiologic Considerations.

Several cases are described and clinical as well as laboratory findings are mentioned.

New conceptions of the monocyte and its importance in different diseases are presented.

The charts and plates are exceptionally good.

A Histologic Study of the Liver in Patients Affected With Peptic Ulcer. Maurice A. Schnitker, M.D., and George M. Hass, M.D., Boston, Mass. *American Journal of Digestive Diseases and Nutrition*, Vol. I, October, 1934.

The authors attempt to add support to the existing evidence that there is some association between the disturbance of the liver or its secretions and peptic ulcer.

Post mortem material in the Peter Bent Brigham Hospital, covering an eleven-year period, 1922-1933, was utilized for study. It was found that fourteen of the seventy-two cases of cirrhosis of the liver (19.5%) has associated typical ulcer of the stomach or duodenum. It was found that fifty of the one hundred ulcer cases had definite histological change in the liver.

On further study based on the type of changes in the liver there were not only more patients with hepatic injury in the series than in the central group but also the ulcer cases showed more definite lesions. A study of the pancreas in ulcer patients gave no significant information.

The conclusions seem to indicate that there may be at least some functional disturbance such as is not always demonstrable histologically in which peptic ulcer and liver pathology are associated.

EYE, EAR, NOSE and THROAT

Edited by Marvin D. Henley, M.D.
911 Medical Arts Bldg., Tulsa

The Conjunctivoglandular Syndrome of Parinaud. Gifford and Dillon, Chicago. Archives of Ophthalmology, October, 1934.

The writers give their opinion that in cases formerly designated as Parinaud's conjunctivitis should now be called the conjunctivoglandular syndrome of Parinaud, since the term Parinaud's conjunctivitis describes merely a syndrome of signs and symptoms.

Verhoeff has conducted more research than any other American on this subject and has devised a delicate method for the detection of the organism. When his method is followed carefully he finds a thread-like organism. With the exception of one other case reported by the authors, the organisms found by Verhoeff have been found only in material stained in his laboratory. Some European authorities regard Parinaud's conjunctivitis as a form of tularemia and suggest that the organism described by Verhoeff is probably due to the tubercle bacilli of animal origin. Parinaud believed that the infection was of animal origin and cited instances of patients suffering from this disease as having previously had contact with a cat. In one of the cases of Dr. Dillon, a farmer's wife, gave a history of having had contact with cats having "sore eyes".

The third case of the authors is reported: A boy, age 11 years, for four days had noticed a swelling of the eyelids and right side of the face and it was with difficulty that the mouth was opened wide. There was enough discharge to stick the eyelids together of mornings. The previous history was essentially negative. There were papillary swellings near the upper part of the fornix conjunctiva and near the middle there was a flat mushroom-shaped granulation about 3 mm. in diameter. The preauricular and cervical glands were enlarged and sensitive. The blood count was: R.B.C. 4,400,000; W.B.C. 8,000; 72 polymorphonuclears; 20 lymphocytes; 6 large mononuclears and 2 eosinophils. Agglutination with bacillus tularensis on the tenth day was negative. The history of animal contact was negative except playing with a dog which had "a lump under the jaw." In six weeks with the use of antiseptics the conjunctiva and glands were again normal.

On the eighth day the largest granulation on the conjunctiva was removed for microscopic examination. Verhoeff's method of staining was employed and among other things there was found a thread-like mold, some of which appeared to show true branching, but this appearance may have been due to the crossing of two threads. A definite radial arrangement of a mass of these threads was shown at one place.

The opinion held by the writers is that the thread-like organism is a member of the group of trichomycetes. Due to the fineness of the threads, their branching and radial arrangement, streptothrix actinomycetes is suggested rather than leptothrix.

Two Cases of Facial Paralysis "A Frigore," Cured by Decompression. Dr. P. G. H. Sander, Port Said. The Journal of Laryngology and Otology, August, 1934.

Innumerable theories have been advanced to explain the anatomical basis of the chief symptoms of

Bell's palsy or as the author terms this condition, "paralysis a frigore."

According to Dr. Sander there is a similarity in the principle of procedure in glaucoma and Bell's palsy. The etiological factor of both conditions remains idiopathic despite years of research work by leading authorities on each subject. It is a recognized fact that certain procedures by the competent ophthalmic surgeon will relieve the intraocular tension, at least temporarily. The same fundamental truth or doctrine influenced the imagination for the inception of the decompression of the nerve in the optic canal for the relief of a neuritis. Decompression of the fallopian canal for relief of Bell's palsy inevitably followed. Other aural surgeons have performed this operation as early as 1908 with good results. Regardless of the cause every case of Bell's palsy, unless decided improvement is manifested in a few days, should be considered surgically. Some authorities claim that when this condition occurs that no delay is justifiable; it is as much of an emergency as an acute appendix. Obviously the earlier a decompression is done, the better the expectation.

Treatment must be given that will remove the infection and inflammation from the region of the middle ear and the mastoid cells. There may be only a chronic catarrhal tubal condition with never a history of an acute infection and clinical examination may be entirely negative. Other conditions such as acute or chronic otitis media, infected mastoid cells, perioritis or osteitis of the fallopian canal, abortive or latent forms of otitis, catarrhal otitis of mild order, may produce a perineuritis and neuritis of Bell's nerve. Experience shows that a nerve may lie in direct contact with pus for quite a period of time and suffer no injury but this is not true of pressure. If there is pressure for very long there will be injury to the nerve and the resulting loss or impairment of function. An example of this is cited in the "chloroform paralysis" or the "Saturday evening paralysis" when the function of the musculo-spiral nerve is temporarily impaired by the pressure of the head or body on its trunk for a few hours, during profound sleep from an anaesthetic or intoxication.

Two cases are reported: A nurse, age 46, after exposure to a cold north wind, noticed in the following days that she had a headache; a moderate rise in temperature; that the left arm became numb; that pain was experienced on the left side of the neck; that seven days afterwards there was a loss of taste for grapes on the left side; that on the tenth day of illness a twitching on the left side of the face began on the forehead and progressed to the eyelids, cheek and mouth; and on the thirteenth day she realized that the left side of her face was paralyzed. A decompression was done and six hours after the operation improvement began.

The second case was that of a Danish seaman, age 45, who, nineteen days previously, suffered exposure in the North Sea to a very cold wind. Three days after entrance to the hospital paralysis of the facial nerve was complete. Examination, among other things, showed a mild otitis catarrhalis of the affected side. A decompression was done and ten days later the paralysis had completely disappeared. An extensive bibliography is appended to this interesting article.

Atypical Mastoiditis. Case Report. Dr. Hyman Sporn, Brooklyn. The Laryngoscope, March, 1934.

Comment is made as to the variety of the nomenclature which designates a mastoid infection which does not yield the typical signs and symptoms of this disease. A resume of the classical mastoid infection

is given from its beginning to the time of operation, including signs and symptoms, haematological and roentgenological findings.

This condition is more commonly found in infants and young children. Operation may show extensive destruction including dreaded complications which were in no way evidenced by the clinical picture. This type of case may easily result in a fatality if the greatest amount of care and judgment are not exercised.

It is not impossible to have a mastoid infection resulting from trauma or by way of the blood stream. Supposedly the most common way is by means of the infection extending from the pharynx up through the eustachian tube, through the middle ear and into the antrum and mastoid cells. Due to a small opening from the middle ear into the mastoid cells the infection may clear up entirely in the middle ear without any drainage occurring through the tympanic membrane and become localized in the antrum and mastoid cells. The blood and lymph stream and the gradual destruction and eating away of adjacent bone may cause further dissemination of the infection.

The case reported is that of a man, age 40, who had a slight discharge from the left ear early in January and was finally operated for a suppurative mastoiditis on May 31st. February 20th there was a profuse creamy discharge from furuncles on the floor and posterior canal wall. The ear-drum was present and normal in appearance. Tuberculosis and syphilis were ruled out at this time and the roentgenogram was negative of the mastoid region. The external otitis at this time looked like an ersipeloid infection. The discharge continued until March 11th, when he was sent to the hospital and these areas of infection in the external canal were drained. He remained in hospital a week and was apparently completely healed in ten days. On March 28th there was a swelling behind the ear and on pressure pus exuded into the external auditory canal. The diagnosis at this time was a cellulitis of the soft tissues with a sinus into the external auditory canal. On April 20th he was again admitted to the hospital for observation. His chief complaint at this time was slight pain over the mastoid region. There was a small fluctuating mass over the region of the antrum. The sinus was still present draining into the external auditory canal. The roentgenogram was again negative. The blood count was W.B.C. 14,000 with 56 polymorphonuclears. April 24th the small mass was incised and a small amount of pus found. He continued in about this condition until May 20th when another roentgenogram showed a breaking down of the cells of the left mastoid. Operation showed a perisinus abscess, periphlebitis, extensive necrosis of the mastoid process near the zygoma and over the canal wall and of the dural plate. The pus cultured staphylococcus albus and aureus. During the entire course of the infection he had temperature only two days, 100 degrees for the first two days after operation on the mastoid. The recovery was uneventful.

The main points of interest in this case are: (a) History. (b) Absence of changes in the membrana tympani and middle ear. (c) Absence of pain and constitutional symptoms. (d) The presence of a cortical perforation into the membranous canal and sinus involvement.

Bacteremia and Acute Infections of the Upper Respiratory Tract. Howard C. Ballenger, M.D., Chicago. Archives of Otolaryngology, October, 1934.

The etiology of the common cold is again discussed. It was in 1914 that Kruse first advanced the theory that they were probably due to a filtrable virus and were produced by means of a bacteria-free

filtrate. His results as reported lack the confirmation of many others doing a similar line of research. The more probable explanation is that a filtrable substance produces activity of the pathogenic organisms which are usually present in the nose and throat. Some of the pathogenic bacteria which may be found here are: streptococci, pneumococci, staphylococci, certain gram-negative cocci and the influenza bacillus. It is less likely that influenza may be caused by a filtrable virus than the common cold.

That hemolytic streptococcus is the predominating organism in a high percentage (84-90) of cases of mastoiditis is confirmed by Soper and Dynes as well as by Kopetzky and Hadjopoulos. This hemolytic streptococcal infection may be extended from the nose and throat by continuity of tissue causing sinusitis and mastoiditis, by the lymphatics causing cervical adenitis and retropharyngeal abscess and through the alimentary track and the blood stream.

In 1932 blood cultures taken from 293 apparently healthy people by Reith and Squier showed a marked increase in the number of positive cultures obtained during the winter months when nose and throat infections were predominant. Some of the probable causes of failure to obtain a positive blood culture are: that the blood stream may have an insufficient number of bacteria present; that the bacteria may not be present in the blood stream at the time the blood was withdrawn; the use of the wrong culture medium or not being left to grow a sufficient length of time; that the liver, spleen, lungs and finer capillaries may have removed most of the bacteria before the blood reaches the vein of the neck or arm from which the blood is usually taken; or the strain may be in a filtrable phase or react in an unusual manner to the staining. It is suggested that the percentage of blood cultures would be higher if the blood were to be taken from an artery.

Many times attacks of acute appendicitis or acute peritonitis occur following a sore throat.

It is obvious that any infection of the nose and throat due to hemolytic streptococcus should not have operative interference during its acute stage. In 28 strains of hemolytic streptococcus it was found human fibrin was liquefied or dissolved in a short time. This might account for post operative bleeding a few days after a tonsillectomy as well as the frequent invasion of the bacteria into the surrounding tissues and blood stream.

In case of an extension of a hemolytic streptococcal infection into the middle ear, the author believes that a paracentesis should be done as soon as there is bulging. This may produce a temporary bacteremia. If the extension of the infection continues and mastoiditis develops there can be no hard and fast rule as when to operate as each case must be judged separately on its individual merits. He advises waiting at least three weeks if possible.

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
LeRoy Long Clinic
714 Medical Arts Bldg., Oklahoma City.

The Principles of and Results After Amputation for Diabetic Gangrene. By Leland S. McKittrick and Theodore C. Pratt. Annals of Surgery, October, 1934, Page 638.

Dr. Kittrick is one of my good friends and I am familiar with his excellent work in diabetic surgery at the Deaconess Hospital in Boston. The Deaconess Hospital is the hospital of Dr. Joslin, the great dia-

betic specialist. Because of his association with Dr. Joslin, Dr. McKittrick has had an unusually wide and varied experience with the surgical complications of diabetes.

In this article he reports 396 patients who were operated for 497 separate lesions of the lower extremities during the eleven years ending December 31, 1933, with a mortality of 11-4/10 per cent; 312 of these conditions were due to arterial deficiency with a mortality of 14-1/10 per cent, whereas in 185 cases where the arterial supply was satisfactory, the mortality was only 7-2/10 per cent.

The mortality following 326 major amputations is 15 per cent.

Most of the successful toe amputations were on feet with good pulsation in the dorsalis pedis arteries, or with other evidence of good blood supply.

With 32, or 56 per cent, of the 57 deaths due to infection secondary to the local condition, the need for early and proper operation seems evident.

Excluding the 32 deaths due to extensive infections on admission, which resulted in pre-operative septicaemia or extensive post-operative infection, a mortality of 5-3/10 per cent was obtained. This is suggested as the approximate mortality from unavoidable causes in this group of bad risk patients. The mortality following major amputation can approximate this only when cases are seen earlier, and the time for and type of operation to be done is accurately selected. The mortality following toe amputations ought not to exceed this by more than a small margin.

A mortality comparable to this "basic" mortality is reported from the 73 cases operated upon in 1933 and for the 185 toe amputations reported during the past eleven years.

Results following amputations at various levels are considered both from the immediate and late result.

Amputations through the lower leg healed satisfactorily in properly selected cases. When this amputation has been done for gangrene, thrombosis in the popliteal or femoral arteries may follow and require amputation through the thigh at a later date.

A lower leg stump adds greatly to the facility of using artificial limbs, but there is no justification for the increased risk and prolonged hospital stay following such an operation unless the general condition of the patient makes subsequent use of an artificial limb probable.

A Gritti-Stokes amputation gives an excellent stump. It is particularly well adapted to one who must be on his feet for long periods of time. The operation is more hazardous than a supra-condylar amputation and is followed by a somewhat longer hospital stay.

The subsequent activities of diabetic patients, operated upon for gangrene, are sufficiently limited so that a good supracondylar amputation will give a satisfactory functional result, and if done with a circular incision without flap is the safest of all amputations.

Painful stump has not been experienced. Result following cauterization of the nerve and alcohol injection have been equally satisfactory.

Late mortality and morbidity in this group of patients is frightful. Of 188 patients operated upon for gangrene, two or more years ago, only 64 are still

alive, and 22, or 34 per cent of these have bilateral amputations.

Bilateral amputation is frequently followed by relief from cardiac symptoms and is compatible with a useful existence and a happy household, particularly if the patient is a woman.

Except for the patients under 60 years of age, a bilateral amputation usually means a wheel chair existence.

In discussing this paper Dr. Lane of Loyola University in Chicago made a very interesting observation in regard to gas bacillus infection. He said that one of his associates, Dr. Gage, had worked out the fact that contact with the skin from wool is the important factor. They had never seen a gas bacillus infection in the summer time when linen clothing was worn. In the winter in injuries where the men were wearing wool clothing gas bacillus infection was not infrequent. The diabetic, while he is waiting for the line of demarcation, usually has his leg wrapped up in a blanket. He cited one patient who was sleeping between blankets and a hypodermic injection was responsible for the gas bacillus infection. Several of their diabetic gangrene patients had amputations which were followed by gas infections and invariably in those patients where attempts had been made to keep the limb warm by wrapping it in a blanket. They cultured new blanket wool and new clothing wool and found in all instances that they were able to cultivate the gas bacillus from ordinary or socially clean wool, not necessarily surgical wool.

—LeRoy D. Long, M.D.

Cancer and Prolapse of the Uterus. Frederick V. Emmert, M.D., and Joseph B. Taussig, M.D., St. Louis, Mo. *American Journal of Obstetrics and Gynecology*, Vol. 28, No. 4, October, 1934.

These authors are reporting 10 cases of complete prolapse of the uterus, four of which have been complicated by carcinoma of the cervix. The case histories are given.

The report is made because of the fact that in the literature it is remarked that carcinoma hardly ever develops on a prolapsed uterus. This, for some time, has been mentioned as one of the questionable factors in application of the theory that chronic irritation is an important factor in the causation of cervical cancer.

These authors justly feel that carcinoma of the prolapsed uterus is not as rare as we have been led to believe. Upon the basis of their report they also minimize the efforts of numerous writers who have attempted to justify the existence of prolapsed uteri with erosions and with no cancer, at the same time stressing the importance of chronic irritation as a predisposing cause of cervical cancer. They also point out that apparently cancer upon a prolapsed uterus is not very active. They give their reasons for this belief.

They feel that cases of cancer found upon prolapsed uteri should first be treated by x-ray and radium followed in three to six weeks by vaginal hysterectomy.

Comment: This is a very interesting and important report, particularly in light of definitely determining the relation between chronic irritative lesions of the cervix and cancer of the cervix, because this general belief of the prolapsed uterus being free from cancer has been one of the weak links in the clinical application of the principle.

—Wendell Long.

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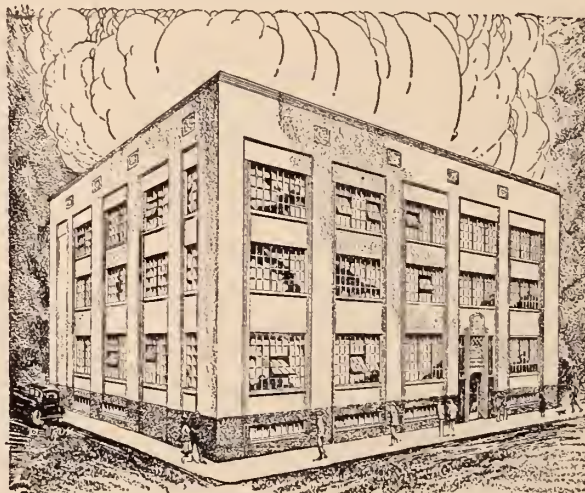
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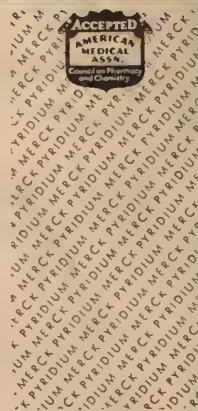
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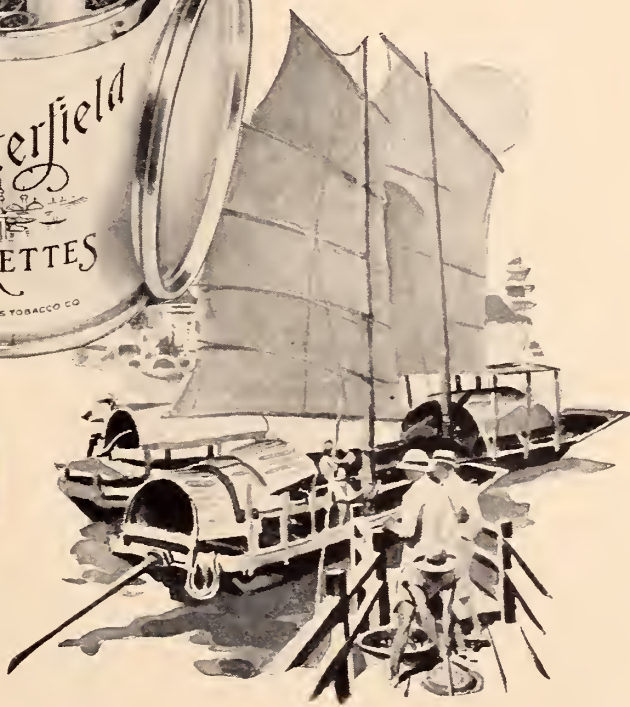
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